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ABSTRACT

In a 3-year study of the impact of education consultation on development of continuing medical education (CME) programs in community hospitals, results seem to indicate that: (1) limited inputs by physicians, acting as education consultants, can significantly facilitate development of hospital-based CME programs. Over a 2-year period, 40 hospitals, comprising a stratified sample of acute, short-term community general hospitals in four New England states, received education consultation and training of their physician education coordinators. Following consultation, trained behavioral scientists visited both the 40 consulted hospitals and a matched group of 40 control hospitals that did not receive consultation. Consultation was shown to be effective on both scores: consulted hospitals implemented 60% of the consultants' recommendations within 18 months after they were submitted; and a statistically significant greater number of educational changes occurred at consulted hospitals than at the matched group of control hospitals. (Author/HS)

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Develop and Evaluate the Consultation Method in Establishing and Maintaining Educational Programs for Physicians

FINAL REPORT

A STUDY OF THE USE OF EDUCATIONAL CONSULTATION TO STIMULATE DEVELOPMENT OF CONTINUING EDUCATION PROGRAMS FOR PHYSICIANS AT COMMUNITY HOSPITALS

Final Report Prepared
by
Marjorie H. Gutchell,
Norman S. Stearns
with the assistance of
Martha Boucouvalas

Submitted to
Division of Physician Manpower
Bureau of Health Professions Education and Manpower Training
National Institutes of Health

Submitted by
Postgraduate Medical Institute
30 the Fenway
Boston, Massachusetts 02215

September 1971

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*Through November 1968

ABSTRACT

CONTRACT NIH 70-4150

IMPACT OF EDUCATION CONSULTATION ON DEVELOPMENT OF CONTINUING MEDICAL EDUCATION PROGRAMS IN COMMUNITY HOSPITALS

In a three year study of the impact of education consultation on development of continuing medical education (CME) programs in community hospitals, results seem to indicate that : 1) limited inputs by physicians, acting as education consultants, can significantly facilitate development of hospital-based CME programs; and 2) with such consultation, community hospitals regardless of size or location can develop and maintain CME programs. Over a two year period, 40 hospitals, comprising a stratified sample of acute, short term, community general hospitals in four New England states, received education consultation and training of their physician education coordinators. Consultants made several visits each year to their hospitals and collaborated with key hospital personnel, including a locally designated physician education coordinator, to 1) review ongoing education programs, 2) identify educational needs and local resources, 3) structure and initiate new programs, 4) provide access to extra-hospital resources. Consultants submitted sets of formal written recommendations to each of their hospitals, tailored to the local situations. During the second year of the study, both consultants and local coordinators took part in five one-day training programs designed to sharpen the consultants' skills and facilitate the local coordinators' development as hospital medical educators.

Following consultation, trained behavioral scientists visited both the 40 consulted hospitals and a matched group of 40 control hospitals which did not receive consultation. The evaluators collected data on two criteria for effective consultation: 1) that hospitals accept the consultants' recommendations, and 2) that more education changes occur at experimental hospitals than at control hospitals.

Consultation was shown to be effective on both scores: consulted hospitals implemented 60% of the consultants' recommendations within 18 months after they were submitted; and a statistically significant greater number of education changes occurred at consulted hospitals than at the matched group of control hospitals.

Throughout the course of the study, both consultants and local coordinators expressed a need for additional

guidance. In response, Norman Stearns, MD, Marjorie Getchell, MA, and Robert Gold, EdM, collaborated to author Continuing Medical Education at Community Hospitals: A Manual for Program Development, which was published in May, 1971 as a supplement to the New England Journal of Medicine. Based on a problem-solving application of basic scientific methodology called "A Systematic Approach to Developing Education Programs", the manual presents how-to-do-it guidelines for developing hospital-based continuing education programs for physicians. The manual also contains guidelines for giving educational consultation to community hospitals.

Two major projects undertaken by PMI were a direct outgrowth of the present contract: the use of education consultation to stimulate physician education programs addressed to the unique problems of the poor in hospitals located in depressed areas, and the development of core libraries in community hospitals.

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BACKGROUND

CONTINUING MEDICAL EDUCATION AT COMMUNITY HOSPITALS

Rapid advances in the development of medical theory and practice during the past two decades has had a dual impact on today's practicing physician. First, medical care progress has resulted in a continuously accumulating body of knowledge which the physician must keep abreast of if he is to provide optimal care to his patients; and second, it has magnified the relationship of the practicing physician to his community hospital.

For the competent physician to practice medicine effectively, he must have at his disposal a vast and ever-developing body of information pertinent to the care of his patients. It has been widely held that the best medical school education can be obsolete within five years of graduation, creating a vacuum which the physician must fill by continuously furthering his own education. The increasing need for continuing medical education is clearly presented in the November 1967 report of the National Advisory Commission on Health Manpower[1] which called for periodic relicensing of physicians. The report recommended relicensing based upon either certification of acceptable performance in continuing education programs or upon challenge examinations in the practitioner's specialty. Recent changes in the case law, requiring that physicians keep abreast of advances in medical science, present another compelling reason for concern. In Brune vs. Belinkoff[2], the Massachusetts Supreme Court overruled, as being unsuited to present day conditions, the rule which measures a physician's conduct by the standards of other doctors in his own or similar communities. The new standard is that the physician must exercise the same degree of care and skill as other practitioners in the same specialty, regardless of where they practice.

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[1] Report of the National Advisory Commission on Health Manpower. Washington: U.S. Government Printing Office, 1967, Volume I., pp. 40-42.

[2] Brune v. Belinkoff, 354 Mass. 102, 235 N.E.2d 793, 1968.

The physician has traditionally relied upon journals and periodic professional meetings as primary modes of acquiring new medical information. However, he is increasingly finding that these methods are no longer solely sufficient to meet his educational needs. With the myriad of materials available from these sources, the physician feels that he can afford neither the time to isolate relevant material nor, frequently, to relate their substance to his practical patient care problems.

Even the physician who is strongly motivated to seek out alternative means of education finds that responsibilities of practice and lack of coherent and accessible programs, organized to meet his educational needs, frustrate his educational ambitions. Enormous expenditures have been directed toward accumulation of new medical knowledge; lacking are corresponding expenditures to develop and provide new, more effective methods of disseminating this knowledge.

In addition to increasing the individual educational responsibility of the physician, the advancing technical complexity of medical care has also magnified the relationship between the physician and the community hospital. The physician is more dependent upon the hospital's services and facilities to provide optimum care for his patients. Consequently, his time spent at the hospital and his involvement with it and its various activities has increased markedly.

The need for comprehensive and relevant continuing education programs, coupled with the physician's close relationship with the hospital, provides a rationale for the thesis that the community hospital is a logical setting for the physician's continuing education. There are unique advantages to a hospital-based continuing education program for physicians. In view of severe limitations of his available time, it is practical to plan a program which can take place as an integral part of the physician's daily activities, and at a location where he regularly attends his patients and meets with his colleagues. It is meaningful, also, to conduct a program for physicians at a place where education can be directly related to the care of his patients. Further, it is possible to incorporate a variety of educational formats and techniques into a hospital-based education program, and to take advantage of teaching materials and devices not otherwise available to the individual practitioner. Lastly, in view of the diversity of practitioner specialization and special practice interests, an education program that is directed at a small and somewhat constant segment of the total physician population, such as a community hospital's medical staff, can be based on identified learner needs and geared in both content and depth to his level of understanding.

Supportive of this concept of a hospital-based continuing education program is legislative history accompanying Public Law 89-239 (Regional Medical Program) which points out that within the community hospital setting, continuing medical education programs can be designed to have real and immediate relevance to problems faced by the physician in his daily practices.

PMI'S APPROACH TO HOSPITAL-BASED CONTINUING MEDICAL EDUCATION

For the past seventeen years, Postgraduate Medical Institute (PMI) has focused its efforts on developing and implementing continuing medical education programs for the physician at his place of daily practice -- the community hospital.

PMI was established in 1953 as a non-profit organization under the sponsorship of the Massachusetts Medical Society. Its objectives were stated as follows:

> It will coordinate activities of all agencies concerned with postgraduate education and in particular it will call in the expert help of the medical schools of the Commonwealth. It will conduct courses carefully planned for the needs of practicing physicians but it will in no way interfere with or compete with the teaching activities of established groups that wish to carry on their own programs. It is prepared to offer assistance to community hospitals or similar groups who wish to develop local programs. Finally, it will be in a position to experiment with and find various new teaching techniques in this most difficult of fields.[3]

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[3] Laurence B. Ellis. Reflections on Postgraduate Medical Education for Practicing Physicians. New England Journal of Medicine, 250: 243-246, 1954.

The Institute began its activities by developing and implementing a lecture series for hospitals and district medical societies throughout Massachusetts. It was soon realized, however, that the isolated lecture was insufficient to fulfill the physician's educational needs, and that the development of coordinated and continuous hospital-based education programs would be a more appropriate undertaking.

PMI urged that the following principles, based upon adult education theory, be incorporated into the development of the education program:

1. Include the physician in the planning and implementation of the education program;

2. Relate the program to the physician's educational needs and interests;

3. Define specific educational program objectives which correspond to identified needs and interests of the physician; and

4. Utilize teaching methods and materials appropriate to the program content.

PMI activated these principles in the form of a consultation program, whereby visiting medical education consultants assisted individual community hospitals, regardless of size, to improve their current education programs or to undertake new ones.

The consultation process was primarily a "catalytic stimulant" to the hospital. As an energizing force, it helped others address, analyze and solve their educational problems. Hospitals and their medical staffs were encouraged to develop collectively their own coordinated programs of continuing education based upon the above principles.

The methods of consultation consisted of several key steps in this self-help process. Although it was well recognized that continuing physician education leads to improved patient care, PMI realized that the prospect of improved patient care was often not enough to induce active participation on the part of very busy staff members. As a result, Step 1 in the development of the hospital-based continuing education program was to stimulate interest in hospital-based education and to encourage the commitment of key personnel, including medical staff, administration and trustees. It was this commitment of individual physicians and local hospitals to their own continuing education which would most significantly affect patient care.

Having obtained both commitment and support of hospital and staff, the consultant was then able to assist the hospital in pinpointing educational resources within the hospital that could be used in the development of educational programs. Step 2 in the consultation process consisted of identifying the educational needs and interests of physician staff members as a basis for defining objectives of the education program.

Step 3 consisted of identifying resources in terms of finances, educational materials and facilities, and personnel. Emphasis was placed on using local strengths for program planning and implementation. In areas where strengths of the hospital were not adequate, methods were undertaken either to develop them or to supplement them with resources of near-by teaching hospitals or medical centers.

With the proper guidance provided by the consultation, the community hospital could develop a viable program on its own initiative, and, in some instances, to a significant degree, with its own talents.

An article written by Dr. Norman Stearns, PMI Executive Director (See Appendix A), for the New England Journal of Medicine, entitled "Positive Approaches to Continuing Medical Education in Community Hospitals", describes various elements of the consultation process and program development in community hospitals.

INTRODUCTION TO PRESENT STUDY

Until 1967, PMI had been able to provide consultation only on a limited basis, utilizing the services of two staff physician consultants. In addition, PMI lacked the resources to study systematically the effectiveness of consultation. In May of 1967, the Division of Physician Manpower, Bureau of Health Professions Education and Manpower Training, National Institutes of Health, contracted[4] with PMI to conduct a one year study of consultation as a means of developing continuing education programs at the community hospital. Under the contract, PMI would train and utilize additional consultants to deliver consultation to a greater number of hospitals. It was hoped that the expanded consultation services would result in a rapid increase in the number of hospitals with active programs of continuing medical education.

At the completion of the first year of the contract, the Division of Physician Manpower felt that the study conducted by PMI warranted further implementation and documentation; it was also felt that greater emphasis should be placed on the training of PMI's consultants and hospital education program coordinators. As a result, the contract was extended for another two years. Since the original contract was to be of one year's duration, the project's design was based on a one year implementation period and was carried out as such. The two year extension period essentially continued the study of consultation services to hospitals with some modifications in design as derived from the first year's experiences.

The present report embodies a presentation and discussion of the objectives of the study, the methods used in pursuing these objectives, the extent to which they were achieved, problems encountered, and the further use to which such methods and findings could be made applicable. Discussion of the final report is divided into two sections: PHASE I, which incorporates activities implemented during the time period of May 1967 through May 1968, that is, the initial contract period; and PHASE II, which covers activities occurring from June 1968 through May 1970.

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[4] Contract NIH 70-4150 (PH 108-67-170)

PHASE I

STUDY OBJECTIVES

The overall purpose of the contract was to study the impact of an education consultation that Postgraduate Medical Institute had provided to community hospitals for a number of years. Consultation was to aid the community hospital in determining, organizing and implementing its own program of continuing medical education (CME) based on identified needs and utilizing internal resources supplemented by resources of the medical centers. The consultation process was viewed as an attempt to effect change, that is, change in community hospital continuing medical education programs. Underlying this premise was the assumption that changes in CME programs would improve the quality of patient care, the ultimate goal of any CME program. It was not the purpose of this study to determine the effect of consultation on the improvement of quality of care rendered patients. (Further discussion of the philosophy and procedures of the consultation appears in the Introduction to the present report, pp.3-5.)

The primary objective of the study was to determine the effectiveness of the consultation process as a means of stimulating and implementing continuing medical education programs at community hospitals. Criteria for effective consultation were established: 1) that hospitals accept the consultants' recommendations, 2) that more education changes occur at experimental hospitals than at control hospital during the study period, and 3) that measurable growth of CME program development occur at experimental hospitals. A corollary objective was the determination of factors associated with the consultation or the community hospital which tended to facilitate or inhibit the impact of consultation. (Appendix B, pp.B1-2, includes the Scope of Work submitted by the contracting agency describing the contract's objectives and procedures.)

STUDY DESIGN

Relevant to the project design, the research question posed was of the nature, "What is the effect of X, e.g., consultation, on Y, e.g., development of medical education programs," X being the independent variable and Y being the dependent variable. The dependent variable refers to the behavior being measured and was operationally defined in the present investigation as the nature of changes relating to continuing medical education occurring in hospitals. The independent variable refers to variables which may affect or influence the dependent variable. Independent variables included:

1) the treatment variable, which refers to the variable manipulated by the investigator, in this case, the consultation process; and
2) fixed variables, which refer to those over which the investigator has no control. They pre-exist and are hypothesized to influence the dependent variable. For the purposes of the present investigation, they were operationally defined as characteristics relating to the hospital, medical staff or consultant.

Evaluation of the effectiveness of consultation (the primary research objective) focused on: 1) assessing changes in the education program at experimental hospitals through examination of the nature and quantity of education activities before and after consultation, and through assessment of implementation of consultant recommendations; and 2) assessing the consequent amount of change induced at experimental hospitals relative to spontaneously occurring change at a matched group of control hospitals. The following evaluation design strategies were formulated:

Pre-Post Experimental Group Design

In order to determine changes in experimental hospitals' education programs, a series of data depicting the quantity and nature of CME activities would be gathered from experimental hospitals prior to and following the medical education consultant visits and would undergo comparative analysis. Pre-data would be collected by the consultant at the time of his initial visit.

Comparison of pre-data with post-data, collected by behavioral science evaluators following consultation using the same survey instruments and techniques as the consultants used for gathering pre-data, would denote changes in the education programs accruing to intervention by consultants.

Ideally, the comparison of the results of this analysis with that of similar analysis of data gathered from a matched group of control hospitals not receiving consultation would yield a more valid measurement of the impact of consultation. The difficulty in obtain- such data from a group of control hospitals plus the potential affect that the data collection process (especially pre-data collection) would have on the development of CME programs at control hospitals precluded the use of a control versus experimental group design in this aspect of the study.

As consultation was seen as a change inducing process and the generation and submission of formal written recommendations were to serve as the primary influencing mechanism, a further critical aspect of the pre-post experimental group design would center on assessing the extent to which hospitals implemented recommendations. This aspect of the study design dovetailed with the pre-post design in the respect that the consultant's recommendations were to be based on his appraisal of the hospital's areas of needed change at the onset of consultation. Hence, assuming a valid appraisal by the consultant, the extent to which hospitals implemented recommendations would provide a post-measure of hospitals' progress as a result of consultation.

Control vs. Experimental Group Design

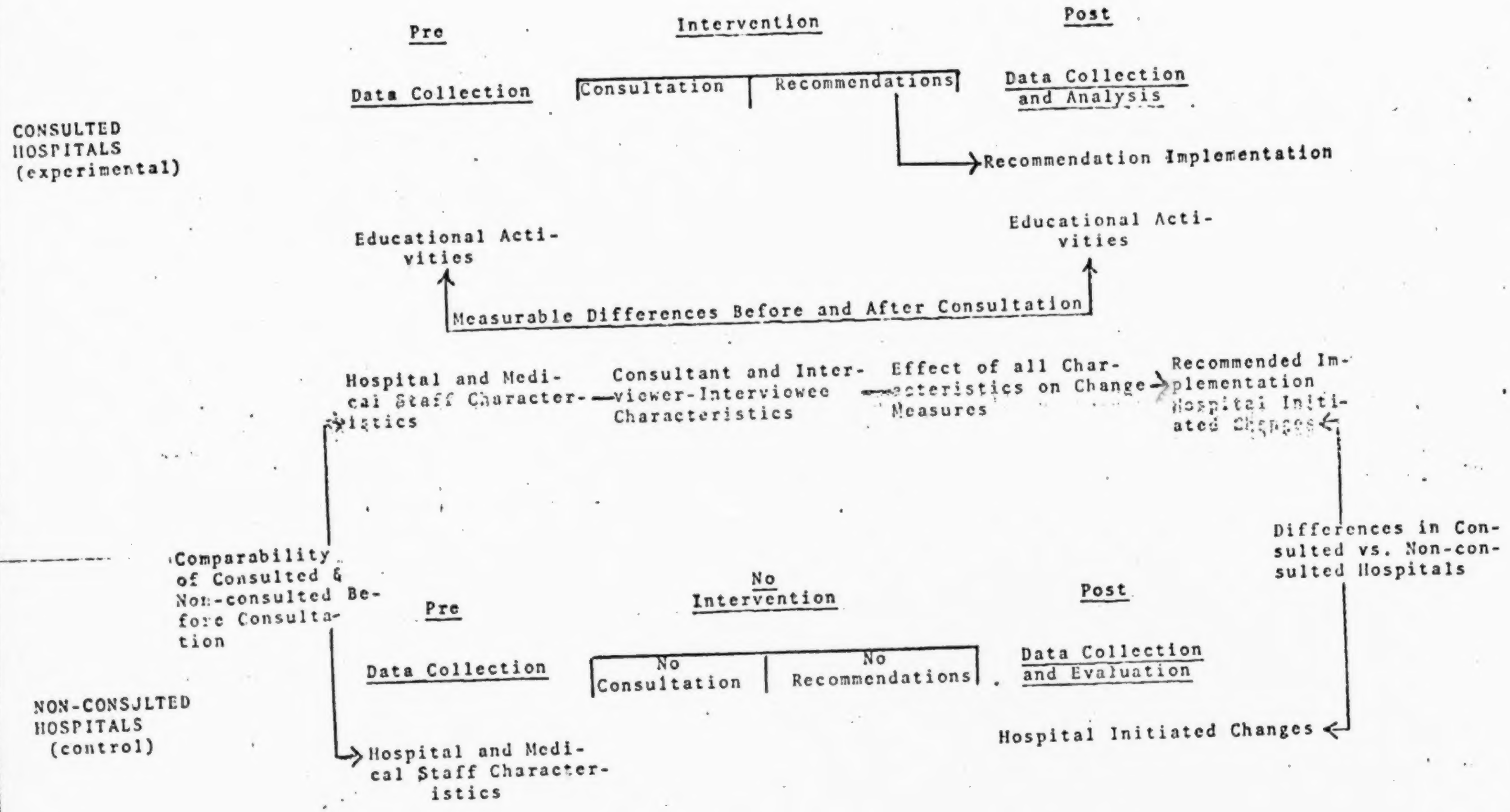
In order to adequately determine whether results would be due to consultation rather than to extraneous or concomitant variables, including the effect of normal growth over the study period, post-consultation change data obtained from a control group of hospitals not receiving consultation would be compared with comparable data gathered from experimental hospitals. Data would reflect the nature and extent of hospital-reported changes, both educational and non-educational, occurring within each group of hospitals. Change, for study purposes, was defined as any reported alteration or addition to existing hospital organization or operational function, including services, personnel and facilities, occurring in the interval from the onset of consultation to the time of follow-up. Data would be collected by behavioral science interviewers after consultation had terminated.

In keeping with the corollary research objective of uncovering factors, both facilitative and inhibitive, which might affect the impact of consultation, a series of measures on a large number of factors hypothesized to be potential influencing factors would be gathered for both experimental (consulted) and control (non-consulted) hospitals. Measures would include characteristics relating to hospital and medical staff attributes within both experimental and control hospitals, and consultant and consultation attributes within the experimental hospitals. Project design called for examination of these factors as they related to, or affected, the various "change measures". (Graphic illustration of the Phase I study design is portrayed in Figure 1, p.11)

PLAN OF PROGRESS

Procedures established for implementation and evaluation of the consultation process were as follows. Project plans called for recruiting and training physician academicians who would provide consultation to a selected group of community hospitals in the states of Maine, Massachusetts, New Hampshire, and Rhode Island. Consultants would make a minimum of two visits to each of their assigned hospitals, meet with key members of the medical staff and administration, and discuss various problems of and possibilities for the hospital's continuing medical education program. At the time of his initial visit the consultant would collect information relevant to the status of the hospital's education program. The data would serve both as a guide for the consultant in determining needed program improvements and as a pre measure in evaluating the effect of consultation on program development. Following the consultation visits, the consultant would formulate a series of recommendations pertinent to the needs of the hospital, submit them to PMI for review and then forward them to the hospital. (A detailed discussion of the consultation procedure is

STUDY DESIGN - PHASE I


Pre
Intervention
Post
CONSULTED HOSPITALS (experimental)
Data Collection
Consultation
Recommendations
Data Collection and Analysis
Recommendation Implementation
Educational Activities
Educational Activities
Measurable Differences Before and After Consultation
Hospital and Medical Staff Characteristics
Consultant and Interviewer-Interviewee Characteristics
Effect of all Characteristics on Change Measures
Recommended Implementation Hospital Initiated Changes
Comparability of Consulted & Non-consulted Before Consultation
Differences in Consulted vs. Non-consulted Hospitals
Pre
No Intervention
Post
NON-CONSULTED HOSPITALS (control)
Data Collection
No Consultation
No Recommendations
Data Collection and Evaluation
Hospital Initiated Changes
Hospital and Medical Staff Characteristics

contained in the section on consultant training and orientation, pp. 23-27) A four month implementation period would follow in which the hospital would have an opportunity to act on any or all of the recommendations. Although a longer implementation period would have provided a more accurate estimate of consultation impact, the time limitations of a one year study precluded any such considerations. Following the allotted implementation period, interviews would be conducted by behavioral scientists with key hospital personnel such as the hospital physician education coordinator, administrator, president of medical staff, member of the board of trustees, and the director of nursing, to determine the status of change within the hospitals, both in terms of recommendations implemented and of other hospital changes that may reflect the impact of the consultation. In order to validate the effect of the consultation, analogous follow-up interviews would be conducted in a matched group of non-consulted hospitals. The remaining period for the one year study would be devoted to data analysis and final report writing.

Achievement of this planned procedure was effected in all but a few instances. The following chapter on project implementation discusses planned procedures in relation to actual accomplishments. (A graphic Plan of Progress, page 13, illustrates both the planned procedures and the actual achievements.)

PROJECT IMPLEMENTATION

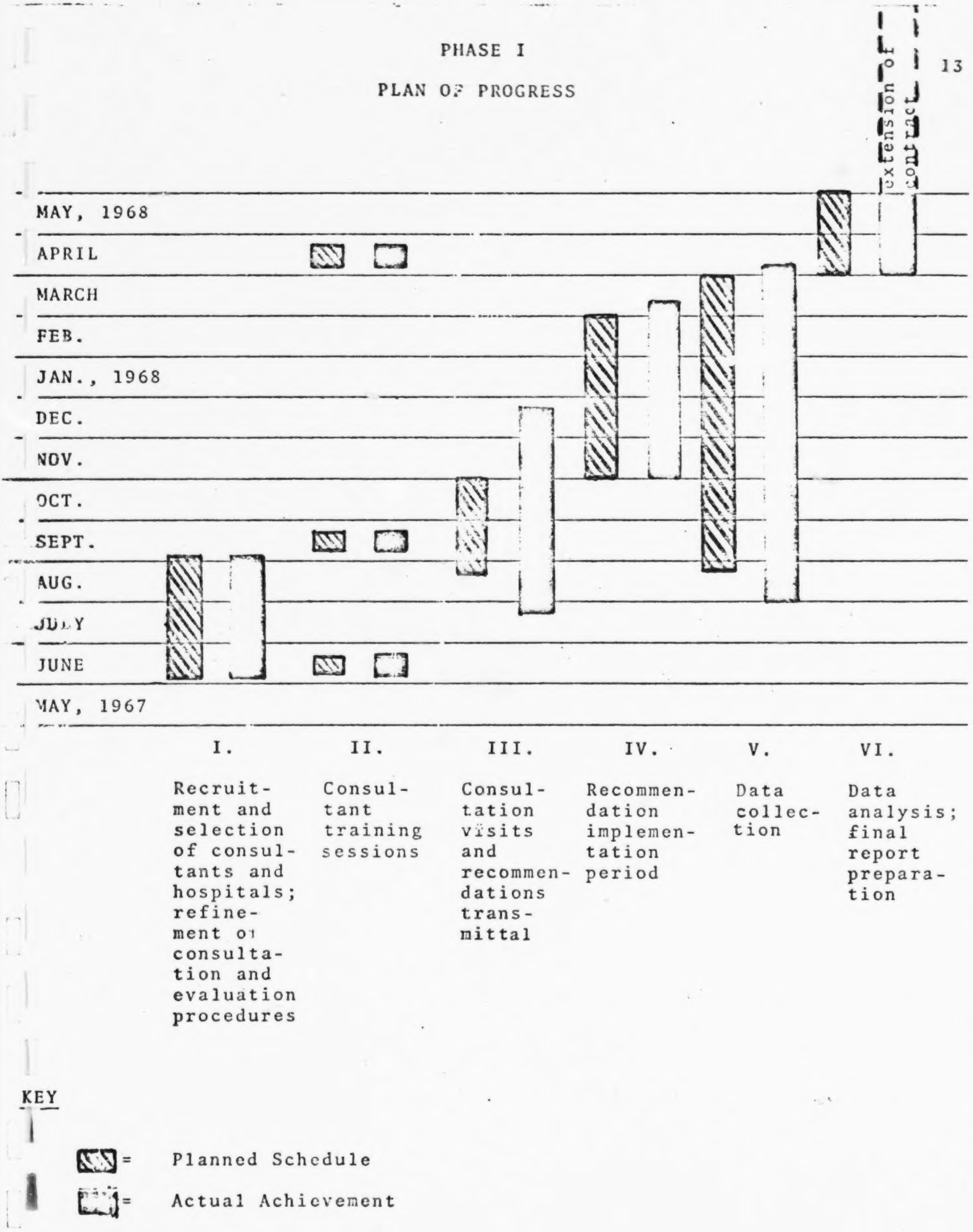
The main purpose of the present section is to describe the overall methodology and execution of the study. Included will be a discussion of how hospitals were selected for the study, how individual consultants were recruited and trained, how consultation proceeded, and how the data were collected, processed and analyzed. In general, the section will deal with the progression of the project from inception to completion.

RECRUITMENT AND SELECTION OF HOSPITALS

The following procedures were employed in recruitment and selection of a sample of hospitals to receive consultation:

PHASE I

PLAN OF PROGRESS



1. Definition of the population from which the sample would be drawn.

2. Solicitation of the population to determine hospitals' willingness to participate in the study.

3. Selection of a "representative, non-biased" sample according to specified parameters.

Characteristics of the study population were defined as follows:

1. Type of hospital--short term stay, community general hospital.*

2. Location of hospital--located in the states of either Maine, Massachusetts, New Hampshire or Rhode Island.

3. Involvement with PMI--hospitals were not currently to be involved to any significant degree with other PMI activities relating to hospital-based continuing medical education programs.

One hundred eighty-eight hospitals in the four New England states constituted the study population.

Accordingly, a letter was mailed to all hospitals in the study population introducing PMI, its goals and objectives, and inviting them to participate in a study to develop, through consultation, continuing education programs for physicians at the hospital. Appendix C contains a sample copy of the letter of invitation and the form on which the hospital could indicate its willingness to receive consultation.

Of the 188 hospitals solicited, 51 initially responded to the invitation, 45 of which indicated a willingness to receive consultation (acceptors) and 7 of which declined the invitation (rejectors). Non-respondents totaled 136.

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* For purposes of this study a community general hospital is defined as a non-specialty hospital with no primary responsibility to the teaching of medical students but with a major obligation to fill medical needs of the community which it serves and in which it is located.

After a period of two months, follow-up letters were sent to all non-respondents, succeeded by a telephone survey conducted by PMI staff physicians to non-respondent hospitals in Massachusetts and Rhode Island. A low response rate from these two states prompted this telephone survey, the purpose of which was to obtain a proportionate representation from each state.

Follow-up efforts resulted in a group of nine additional hospitals desiring to participate in the study. This brought the total group of acceptors to 54.

Selection criteria were established to be applied to this acceptor group in order to ensure a representative, non-biased sample of the study population:

1. The number of sample hospitals selected from each state must be proportionate to the total number of "population" hospitals within the state.

2. Bedsize distribution of the selected sample must be proportionate to the four state and national distribution.

3. Selected sample must include a distribution of hospitals varying in distance from Boston, where both the consultative agency (PMI) and primary New England medical and educational resources were located.

Upon application of the selection criteria, 40* hospitals were chosen to participate as experimental hospitals. Distribution of the experimental group according to the three selection criteria--state location, bedsize, and distance from Boston--may be found in Tables I, II and III respectively.

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* Although the original contract called for 30 experimental hospitals, the sample number selected was increased to 40 in order to allay any research problems arising from the usual attrition of cases encountered in social science research.

Table 1

Distribution of Experimental Hospitals According to State Location as Compared with Distribution of Study Population

STATE	STUDY POPULATION*		EXPERIMENTAL SAMPLE	
	Number	Percent	Number	Percent
Massachusetts	88	46.8	12	30.0
Maine	53	28.2	14	35.0
New Hampshire	31	16.5	9	22.5
Rhode Island	16	8.5	5	12.5
Total	188	100.0	40	100.0

*Study population is defined as all short term stay, community general hospitals located in the states of Maine, Massachusetts, New Hampshire or Rhode Island which were not currently and actively involved with other PMI activities relating to hospital-based continuing medical education programs.

Table 2

Distribution of Experimental Hospitals by Bed Size As Compared with National and Study Population Distributions

NUMBER BEDS	NATIONAL*		STUDY POPULATION**		EXPERIMENTAL SAMPLE	
	Number	Percent	Number	Percent	Number	Percent
Under 25	523	8.6	4	2.1	1	2.5
25-49	1500	24.6	41	21.8	6	15.0
50-99	1528	25.1	63	33.5	16	40.0
100-199	1147	18.8	46	24.5	8	20.0
200-299	609	10.0	23	12.2	9	22.5
300-399	325	5.3	7	3.7	0	0.0
400+	454	7.5	4	2.1	0	0.0
Total	6086	99.9	188	99.9	40	100.0

Table 3

Distribution of Experimental Hospitals According to Distance from Major Medical Center (Boston)

DISTANCE (miles)	EXPERIMENTAL SAMPLE	
	Number	Percent
0-49	10	25.0
50-99	16	40.0
100-199	9	22.5
200+	5	12.5
Total	40	100.0

*Data obtained from J.A.H.A Hospitals Guide Issue, 1967. Includes all general, short-term hospitals, 124 hospital units of institutions, and 94 long-term, general hospitals. N.B. Because these statistics include long-term hospitals and university teaching and affiliated hospitals, data present an estimated reflection of national distribution of hospitals pertinent to this project.

**Data obtained from: J.A.H.A. Hospitals Guide Issue, 1967, Wilson G. Smillie, Jean A. Curran, "Medical Care in the State of Maine. 1956-1962." (Sponsored and financed by Bingham Associates Fund, Bethel, Maine, 1961); PMI surveys.

Project design called for a simultaneous selection, from the group of hospitals which accepted the invitation to participate in consultation, of a group of control hospitals, that is, hospitals who would participate in evaluation segments of the study but would not receive consultation. The control hospitals would be matched as a group with experimental hospitals along the parameters of bedsize, state location, and geographic proximity to the experimental hospitals. As with the experimental group, the control group was to include only those hospitals who had originally agreed to participate in the consultation. Due to the depletion of the acceptor group as a result of experimental group selection, only 13 acceptors remained. All 13 were selected for inclusion in the control group. Twenty-seven additional hospitals from the non-respondent category were selected according to the criteria discussed above.*

Letters were sent to the selected sample inviting them to participate as a control in the study and stating the activities in which they would be involved. Participation would include a half-day interview by behavioral scientists of several key members of the hospital staff and completion of a few hospital biographical forms for research purposes. The letter also indicated a time period during which the control hospital could expect a telephone follow-up from the consultative agency to obtain their response to the invitation and make arrangements for the interview visits. All but two of the hospitals, both of which had been selected from the non-respondent category, replied that they would be willing to participate as controls. Two replacements from the non-respondent group were invited and agreed to participate.

Table 4 provides a visual description of the matched experimental and control groups distributed according to the selection criteria of bedsize and state location.

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*To examine the possibility that the inclusion of 27 hospitals that did not respond to the initial invitation had introduced a sampling error, a series of intra-group and inter-group analyses were conducted to test the appropriateness of the control group. Each of the two control sub-groups (13 respondents requesting consultation and 27 non-respondents) was compared independently to the experimental group and to each other on the primary dependent measures of the study. When the two control sub-groups were compared with each other, no statistically significant differences were found between them. When each of the control sub-groups was compared with the experimental group, statistically significant differences of similar magnitude were found in both cases. These findings seem to indicate that hospitals which initially requested consultation were not more change-prone than those additionally recruited to serve as controls, and that the non-consulted hospitals constituted an appropriately matched control group.

Table 4

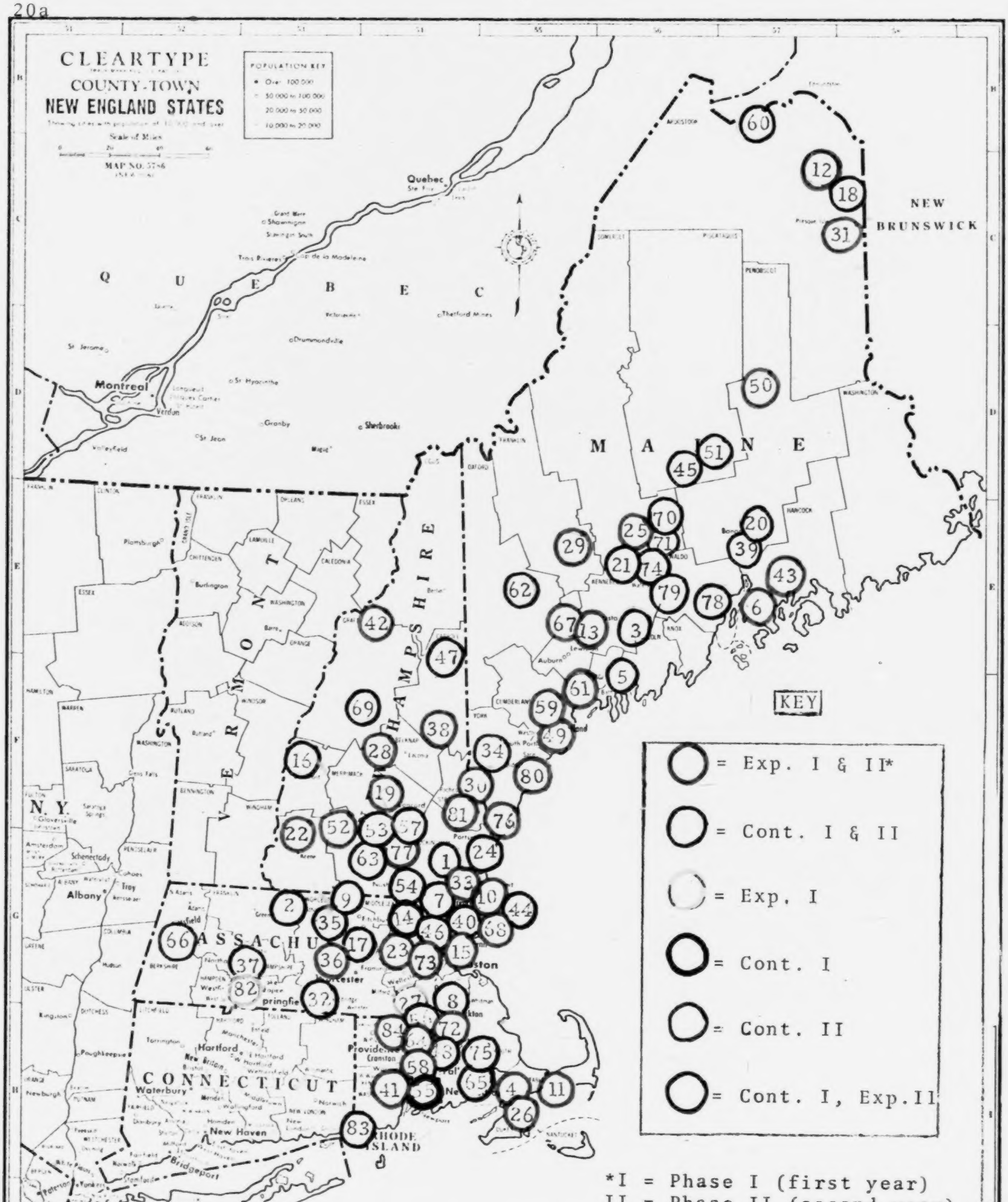
Distribution of Experimental and Control Hospital Groups by Bed Size and State

Bed Size	MAINE (N=28)		MASS. (N=27)		N.H. (N=18)		R.I. (N =8)	
	Exp.	Control	Exp.	Control	Exp.	Control	Exp.	Control
under 25	1	1	0	0	0	0	0	0
25-49	4	3	1	1	0	1	1	0
20-99	5	6	4	4	6	5	1	1
100-199	1	3	4	5	3	3	0	1
200-299	3	0	3	4	0	0	3	1
300+	0	1	0	0	0	0	0	0
Total	14	14	12	15	9	9	5	3

An alphabetical listing of experimental and control hospitals with their locations may be found in Appendix D, Phase I, p.D-1. The reader is also referred to the map on p.20a&b which indicates the location of experimental and control hospitals for Phase I and Phase II.

RECRUITMENT AND SELECTION OF CONSULTANTS

In order to help ensure the provision of a consultation that was consistent with PMI's principles of hospital-based education program development, and to ensure standardization of the consultation being provided to hospitals for study purposes, the recruitment of consultants was of crucial importance. The possibility existed for using either university-oriented medical educators or community hospital practitioners as consultants. Ideally, consultants should have been authorities in both areas--medical education and community hospital practice--but availability of such individuals was limited. The academicians would be expert in medical education and could provide ready access to teaching center resources, but would have to be trained in developing skills and


CLEARTYPE
COUNTY-TOWN
NEW ENGLAND STATES
Scale of Miles
POPULATION KEY
Over 100,000
50,000 to 100,000
20,000 to 50,000
10,000 to 20,000
QUEBEC
NEW BRUNSWICK
MAINE
NEW HAMPSHIRE
VERMONT
MASSACHUSETTS
CONNECTICUT
RHODE ISLAND
N.Y.
N.J.
Montreal
Quebec
Sherbrooke
Albany
Hartford
New Haven
Boston
Worcester
Springfield
Providence
New York
KEY
○ = Exp. I & II*
○ = Cont. I & II
○ = Exp. I
○ = Cont. I
○ = Cont. II
○ = Cont. I, Exp.II
*I = Phase I (first year)
II = Phase II (second year)

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KEY TO MAP

MAP #	HOSPITAL	LOCATION	STUDY STATUS
1.	Alexander Eastman	Derry, N.H.	Cont. I & II *
2.	Athol Memorial	Athol, Mass.	Cont. I & II
3.	Augusta General	Augusta, Maine	Cont. I & II
4.	Barnstable County	Pocasset, Mass.	Exp. I & II
5.	Bath Memorial	Bath, Maine	Cont. I & II
6.	Blue Hill Memorial	Blue Hill, Maine	Exp. I & II
7.	Bon Secours	Methuen, Mass.	Cont. I & II
8.	Brockton	Brockton, Mass.	Cont. I & II
9.	Burbank	Fitchburg, Mass.	Cont. I & II
10.	Cable Memorial	Ipswich, Mass.	Exp. I & II
11.	Cape Cod	Hyannis, Mass.	Exp. I & II
12.	Cary Memorial	Caribou, Maine	Exp. I & II
13.	Central Maine General	Lewiston, Maine	Exp. I & II
14.	Charles Choate	Woburn, Mass.	Cont. I
15.	Chelsea Memorial	Chelsea, Mass.	Exp. I & II
16.	Claremont	Claremont, N.H.	Cont. I & II
17.	Clinton	Clinton, Mass.	Cont. I & II
18.	Community General	Fort Fairfield, Maine	Cont. I & II
19.	Concord	Concord, N.H.	Exp. I & II
20.	Eastern Maine General	Bangor, Maine	Cont. I & II
21.	Elizabeth Ann Seton	Waterville, Maine	Cont. I & II
22.	Elliot Community	Keene, N.H.	Exp. I & II
23.	Emerson	Concord, Mass.	Exp. I & II
24.	Exeter	Exeter, N.H.	Cont. I & II
25.	Fairview	Skowhegan, Maine	Exp. I & II
26.	Falmouth	Falmouth, Mass.	Exp. I & II
27.	Fogarty Memorial	North Smithfield, R.I.	Exp. I
28.	Franklin	Franklin, N.H.	Exp. I & II
29.	Franklin County Memorial	Farmington, Maine	Exp. I & II
30.	Frisbie	Rochester, N.H.	Exp. I & II
31.	A. R. Gould	Presque Isle, Maine	Exp. I & II
32.	Harrington Memorial	Southbridge, Mass.	Cont. I & II
33.	Haverhill Municipal	Haverhill, Mass.	Exp. I & II
34.	Henrietta Goodal	Sanford, Maine	Cont. II
35.	Henry Heywood Memorial	Gardner, Mass.	Cont. I & II
36.	Holden District	Holden, Mass.	Exp. I & II
37.	Holyoke	Holyoke, Mass.	Cont. I & II
38.	Huggins	Wolfeboro, N.H.	Exp. I & II
39.	J. A. Taylor Osteopathic	Bangor, Maine	Cont. I & II
40.	J. B. Thomas	Peabody, Mass.	Cont. I & II
41.	Kent County	Warwick, R.I.	Exp. I & II
42.	Littleton	Littleton, N.H.	Exp. I & II
43.	Maine Coast Memorial	Ellsworth, Maine	Exp. I & II
44.	Mary A. Alley	Marblehead, Mass.	Cont. I & II
45.	Mayo Memorial	Dover-Foxcraft, Maine	Cont. I & II
46.	Melrose-Wakefield	Melrose, Mass.	Cont. I & II
47.	Memorial	North Conway, N.H.	Cont. I & II
48.	Memorial	Pawtucket, R.I.	Cont. I & II
49.	Mercy	Portland, Maine	Exp. I & II
50.	Millinocket	Millinocket, Maine	Exp. I & II
51.	Milo Community	Milo, Maine	Cont. I & II
52.	Monadnock	Peterborough, N.H.	Exp. I & II
53.	Moore General	Goffstown, N.H.	Cont. I & II
54.	Nashua Memorial	Nashua, N.H.	Cont. I & II
55.	Newport	Newport, R.I.	Cont. II
56.	Notre Dame	Central Falls, R.I.	Cont. I & II
57.	Notre Dame de Lourdes	Manchester, N.H.	Cont. I & II
58.	Osteopathic General	Cranston, R.I.	Exp. I & II
59.	Osteopathic of Maine	Portland, Maine	Exp. I & II
60.	Peoples Benevolent	Fort Kent, Maine	Cont. I & II
61.	Regional Memorial	Brunswick, Maine	Exp. I & II
62.	Rumford	Rumford, Maine	Cont. I, Exp. II
63.	Sacred Heart	Manchester, N.H.	Cont. I & II
64.	St. Joseph's	Providence, R.I.	Exp. I & II
65.	St. Luke's	New Bedford, Mass.	Cont. I, Exp. II
66.	St. Luke's	Pittsfield, Mass.	Cont. II
67.	St. Mary's	Lewiston, Maine	Exp. I & II
68.	Salem	Salem, Mass.	Exp. I & II
69.	Sceva Speare	Plymouth, N.H.	Cont. I & II
70.	Scott Webb	Portland, Maine	Cont. I & II
71.	Sebasticook Valley	Pittsfield, Maine	Cont. II
72.	Sturdy Memorial	Attleboro, Mass.	Exp. I & II
73.	Symmes	Arlington, Mass.	Exp. I & II
74.	Thayer	Waterville, Maine	Cont. I, Exp. II
75.	Tobey	Wareham, Mass.	Cont. I & II
76.	Tri-County Osteopathic	Kittery, Maine	Exp. I & II
77.	V. A. Manchester	Manchester, N.H.	Exp. I & II
78.	Waldo County General	Belfast, Maine	Cont. I & II
79.	Waterville Osteopathic	Waterville, Maine	Cont. I & II
80.	Webber	Biddeford, Maine	Exp. I & II
81.	Wentworth-Douglass	Dover, N.H.	Exp. I & II
82.	Wesson	Springfield, Mass.	Exp. I & II
83.	Westerly	Westerly, R.I.	Cont. I & II
84.	Woonsocket	Woonsocket, R.I.	Exp. I & II

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*I = Phase I (first year)
II = Phase II (second year)

attitudes needed to relate effectively to community hospitals. The practitioners, familiar with the community hospital, would possess ability to relate to community hospitals, but would have to be trained in developing knowledge of education processes. PMI chose to exploit the already developed educational expertise of medical academicians and launched a recruitment program accordingly.

Three basic criteria were established for recruitment purposes:

1. The consultant should be familiar with medical education philosophies and methodologies.
2. The consultant should approve of the concept that continuing education for physicians can be effective in a community hospital setting.
3. The consultant should be familiar with the medical education and patient care activities and problems unique to each of the four states in the study.

Thirteen consultants were recruited: one consultant whose background included many years of practicing medicine in the state of Maine, one consultant from Rhode Island, and the remaining 11 from Massachusetts. Attempts were made to recruit a consultant from New Hampshire, but these attempts were not successful. All but one of the selected consultants had an academic position at a medical school. A full listing of consultants with their academic titles can be found in Appendix E, Phase I, p. E-1.

ASSIGNMENT OF CONSULTANTS TO EXPERIMENTAL HOSPITALS

In order to minimize the potential biases resulting from interaction of individual consultants with their hospitals, the following consultant assignment criteria were established:

1. Assignment of consultants to a minimum of three hospitals. A larger hospital assignment was desirous but the necessary time commitment that would be required could not be obtained

from the consultants.

2. Assignment of consultants to a distribution of hospitals varying in bedsize and state location.

3. Assignment of consultants to a distribution of hospitals varying in distance from the consultant's home base. (It was felt that the distance between hospital and consultant's home base may affect the consultant's potential time and service afforded his hospitals.)

Ten of the 13 consultants* were willing to consult with a minimum of three hospitals. Six of the ten accepted an assignment of four hospitals. Consultants were assigned a set of hospitals varying in bedsize from large (over 200 beds) to small (less than 50 beds) and located in at least two of the four states.

ORIENTATION AND TRAINING OF CONSULTANTS

As discussed in the study design section, the major independent variable manipulated by the investigator in the present study was that of consultation. The primary question to be answered was, "What was the effect of consultation on the development of continuing physician education programs?" It follows that a major effort would have to be expended to minimize bias and maximize reliability of the consultant's approach to the hospital. An essential step in that direction was taken in the selection of consultants and their assignments to experimental hospitals. More fundamental, however, was the adequate indoctrination and preparation of consultants in order that they might provide analogous consultation services to hospitals. This necessary component was accomplished in three consultant training sessions as well as individualized informal debriefing and review sessions held with the PMI staff.

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* As requirements of the consultation commitments became fully recognized, three consultants found it possible to work with only one or two hospitals. Due to the time specifications of the contract, it was not feasible to drop these consultants and recruit others to replace them.

Formal Training

The first training session, a two-day orientation workshop (June 27-28, 1967) was held for the consultant staff shortly after final selection of hospitals and consultants, and prior to the consultants' going out into the field. (A copy of the agenda and minutes of the meeting may be found in Appendix F , Phase I, pp.F1 a-h.) The main objective of this session was to orient both PMI staff and consultant personnel in the following areas:

1. The project and contract objectives,
2. The project design,
3. The role of both staff and consultant personnel, and
4. Implementation of the consultation process.

During this initial session, the nature and purpose of the present study was discussed, and the background of PMI and its relation to other medical institutions were reviewed. The most important part of this initial session, however, was embodied in areas numbers 3 and 4 above. A large portion of the two-day session was devoted to 1) clarifying the goal of consultation and the role of the consultant; that is, "to help hospitals to develop their own continuing medical education programs--not to establish programs for them"; 2) indoctrinating them in detail as to the content and process of consultation; and 3) briefing them as to what was expected of them by both PMI and the hospital.

Consultants were expected to make two visits to each of their assigned hospitals. "Reports of visits" consisting of what occurred and what was discussed with hospital personnel during the visit were to be submitted to PMI after each visit.(Appendix F, p. F-1i).

The purpose of the first visit was multifold:

1. To explain PMI's purpose and the nature of the contract.
2. To state objectives of the consultation, that is, what the hospital should expect from PMI,

and what PMI expected from the hospital. Consultants were to explain that PMI would assist them in establishing for themselves a continuing education program. Cooperation of the hospital would be needed in periodically completing various forms, when warranted.

3. To ask the hospital to appoint a physician liasion between PMI and the hospital. Such an individual could be either a DME, chairman of the education committee, or any staff representative who would act as the local education coordinator and who would be able to assist the consultant in assessing needs and identifying resources in the hospital.

4. To outline a plan of action to be taken by the hospital before the consultant's next visit:

    a. Enlist support of the local education coordinator to summarize the state of existing education activites and hospital facilities and services. Such data would serve a two-fold purpose: 1) as a take-off point for discussions of needed improvements in the education program, and 2) as a pre-measure for the evaluation of changes in CME program development before and after consultation. See Appendix G, pp. G-1-7 for a copy of forms used to gather the information. These forms had been used by PMI in its program development activities prior to the onset of the present contract. They are discussed more fully in the section of this report entitled "Data Collection", pp. 31-33.

    b. Speak to staff representatives to gain acceptance of PMI endeavors aimed at determining needs, interests, and resources of the medical staff as procured by "staff questionnaire forms". (See Appendix G, pp.G8 a-b for copy of form, and section entitled "Data Collection" for a more complete discussion of the questionnaire.)

At a meeting held on September 12, 1967, presentations and discussion focused on content and process of consultant visits, as well as desired format and scope of recommendations. Most consultants had completed at least one visit to hospitals. The following areas were discussed:*

1. Nature and content of visits to hospitals;

2. Role of hospital physician education coordinator in the project; and

3. Nature and scope of recommendations.

   Recommendations were to be clearly and explicitly stated, avoiding ambiguity. Reference was to be made to specific rather than to general areas, for example, "Establish an ICU unit" rather than "Establish more facilities and services."

   The following types and content areas of recommendations were reviewed:

   a. Oral vs. written

      As noted previously, all consultants were required to transmit a set of written recommendations to the hospital upon completion of both consultation visits.

      While on visits, however, a number of consultants made oral suggestions to the hospital which were not included ultimately in the written recommendations transmitted. In order to assure valid verification of the total impact of consultation, it was deemed necessary by the research staff to discern and denote any such suggestions made. Such advice or suggestions were considered "oral recommendations".

   b. Educational and non-educational

      It was not possible to limit recommendations to strictly educational matters. To be classified as educational, a recommendation had a primary objective of affecting the education of hospital personnel, e.g., "implement grand rounds," "initiate a team approach to educate programs centered on the coronary care unit, " "medical staff and administration jointly appoint a DME". Any recommendation that did not specify a primary educational objective or was not directly related to the education of hospital personnel was placed in the non-education category, e.g., "develop an ICU," provide salaried emergency ward staff coverage," "investigate the possibility of providing home care services."

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* (Appendix F, p. F-2a includes agenda.)

c. Physician and non-physician professionals

In accordance with the belief of PMI that, when appropriate, a continuing medical education program should be multi-disciplinary, that is, include nurses and other health professionals, consultants were encouraged to formulate recommendations addressed to the continuing education of non-physician personnel.

In order to assist the consultant in development of recommendations, and to standardize the consultation process, consultants were furnished with a guide for preparing recommendations and a set of procedures and suggested format for transmitting recommendations (see Appendix F, p. F-2b-c).

Also included at the September meeting was a presentation by the project staff of resource material available for consultant use. Information relating to hospital libraries and the Professional Activity. Study and Medical Audit Program (PAS-MAP) was discussed.

After Phase I consultation visits were terminated and upon completion of the evaluation follow-up interviews, a final consultant meeting was held on April 25, 1968 (Appendix F, p. F-3 contains agenda). The purpose of this final meeting was twofold:

1. Present preliminary findings of Phase I research (the reader is referred to section of present report dealing with Results, of Phase I, for a thorough discussion of the findings); and

2. Discussion of and orientation to contract extension (Phase II).

Informal or Individual Training of Consultants

In addition to formal consultant meetings, each medical consultant received additional individual assistance and guidance in the following manner:

1. Review of "report of visits"

   As noted previously, all consultants were required, upon completion of each hospital visit, to submit to the PMI staff a "report of visit" summarizing areas discussed with hospital personnel and their reactions to or thoughts regarding the visit or the hospital.

   Each report was carefully reviewed by the PMI staff. The primary purpose of the review was to provide background and/or supplemental information to the consultant. For example, if a specific request was made for information concerning a problem area, the staff would provide the consultant with further assistance in the specified area.

2. Review of proposed recommendations

   Prior to the transmittal of recommendations to a hospital, an in-person review session was held with each consultant. The review committee was composed of the project director, a medical staff member, and a research staff member.

   The purpose of the session was to further instruct consultants in the techniques of education program development on a personal basis using the case study approach. Also it was intended that these sessions would provide additional guidance to consultants in formulating his final recommendations.

CONSULTATION IMPLEMENTATION*

All 13 consultants visited their hospitals during the summer and fall of 1967 following the procedure outlined in the June 27-28 training workshop, pp.

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*To assist the reader in understanding the nature and procedure of consultation, case studies of two typical experimental hospitals are presented in Appendix I. The case studies include consultation activities for both Phase I and Phase II.

Consultation sessions usually lasted half a day to a full day.

Discernable deviations from the consultation plan were the use of forms, the time schedule and the number of visits hospitals received. Twenty-two of the 40 experimental hospitals did not return the Physician Activity Sheet and 10 of the hospitals submitted less than 50 percent of the completed staff questionnaires. Reasons for low return rates varied from consultants choosing not to submit the forms to the hospitals for completion, to hospitals failing to complete the forms after receiving them from the consultants.

Consultation visits, as noted in the Plan of Progress, page 13, were scheduled to appear during the months of August, September and October culminating with a set of written recommendations which were to be sent to the hospitals at the beginning of November. Fourteen hospitals received one visit from their consultants, the remaining 23 receiving two or three visits. Some consultants began visiting their hospitals in July when it became apparent that the summer months, a time when a large proportion of medical staffs are vacationing, would not necessarily be a hindrance to the consultation process. Several hospitals received consultation visits after the November 1 deadline for transmission of recommendations to hospitals. Twenty hospitals received their recommendations after November 1, the latest date of transmission being mid-December, and three hospitals did not receive them at all. In order to allow hospitals to have approximately the same amount of time to implement recommendations, the follow-up interviews for those hospitals receiving late recommendations were scheduled for the latter part of the follow-up period. A total of 353 recommendations were submitted to 37 hospitals. The nature and outcomes of the recommendations are discussed in the Results section.

DATA COLLECTION AND RESEARCH INSTRUMENTS

Two categories of data were collected: 1) data for purposes of program development; and 2) data for research and evaluation of the impact or effect of the consultation process.

Data Collection for Purposes of Program Development

As discussed under the section of the present report entitled "Study Objectives", the consultation procedure for assisting community hospitals was based on first ascertaining the needs and interests both of the hospital and the medical staff on which a CME program could be developed and identifying local resources for the program. Instruments used to facilitate collection of data pertinent to the above objectives had been extensively utilized by PMI in consultation activities prior to the onset of the present contract. The reader is referred to Appendix A, "Positive Approaches to Continuing Medical Education in Community Hospitals," by Norman S. Stearns, M.D., for a discussion of PMI's philosophy of consultation, and rationale underlying the use of the forms. (Copies of the instruments may be found in Appendix G, pp. G1-8.)

1. Schedule of Educational Activities

   In keeping with the philosophy of an interdisciplinary approach to CME program development, two forms were provided--one for physician education activites, a second for non-physician education activities. (Appendix G, pp. G2 - 3.) The purpose of soliciting the above information was to provide a summary of existing activities at the hospital in order that the consultant could better understand the existing status of the education program and that he with the hospital could begin to determine some of the inadequacies of the program.

2. Hospital Facilities and Services

   Hospitals were to complete the "Hospital Facilities and Services" form (Appendix G, p.G-5) by checking those facilities and services available at the hospital. This data was to be used to determine the potential implication of facilities and services as a basis for educational programming, e.g., hospitals with CCU units have the potential of building a segment of their continuing education activities program around the CCU unit.

3. Staff Questionnaire

   In order to ascertain the educational needs and interests of the staff physicians, a "Staff Questionnaire" instrument (Appendix G, p.G-8) was utilized. The purpose of the instrument was to assist the consultant in determining resources, caliber, and interests of the hospital medical staff regarding continuing medical education. The form was to be completed by each member of the active staff and then forwarded to PMI for compilation and summarization.

4. Key Considerations in Development of Educational Programs--Tentative Reporting Sheet for Consultation

This checklist of items (Appendix G, pp. G-ba-d) provided a guide for the personal use of the consultant. In essence, the instrument was a debriefing form enabling the consultant to indicate areas discussed with the hospital team during the two consultation visits. The value of the instrument was twofold:

a. It facilitated report writing, i.e., "reports of visits", for the consultant and,

b. By enumerating specific areas discussed, it provided a more thorough and more accurate account of the impact being made by the consultant.

5. PMI Planning Calendar

The chronological time record (Appendix G, p.G-7), depicts days, data, and months of the year and denotes all legal holidays and religious observances. For each day of the year, an area is provided in which to insert scheduled or planned educational activities. This instrument was to encourage schedule planning of educational activities for long periods of time and avoid conflicts with holidays and other "no meeting" days. Planners could also view time and content aspects of the program in perspective for an entire year.

All hospitals were provided with the appropriate forms; however, it was the responsibility of the individual consultant to encourage collection of data. Physician education coordinators, or other designated individuals, were responsible for actually collecting the information.

Data Collection for Purposes of Evaluation and Analysis

It will be recalled (see section entitled "Study Design") that a pre-post design, and an experimental-control design were employed in the present investigation for purposes of evaluation. In order to determine the extent to which the consultation program influenced education program development, attempts were made to collect data before and after consultation in experimental hospitals. Data collected as discussed in the preceding section for purposes of program development had a two-fold purpose in that information also, theoretically, was to serve as a pre-measure, i.e., what experimental hospitals were doing prior to the intervention of PMI consultants. However, consultants did not systematically use the data collection forms at the onset of consultation, (see Consultation Implementation, p. 28) therefore making it impossible to establish baseline data for evaluation purposes. Consequently, this aspect of the study design, that is, determination of the impact of consultation by analyzing differences in pre and post measures on educational program development, had to be abandoned as an evaluation strategy.*

Post (or after consultation) measures, collected in both experimental and control hospitals, following the designated "Recommendation Implementation Period", are the subject of discussion in the present section, as is the collection of mediating factors (facilitative or inhibitative) affecting implementation of continuing physician education programs. Types of data collected are delineated, and methods of data collection are discussed.

Types of Data Collected

As discussed in foregoing sections, "change" data, that is changes occurring in continuing medical education due to the impact of our consultation, constituted the major dependent variable. This "change data" was operationally defined as:

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*Attempts to reestablish baseline data during the second phase of the study will be discussed in Phase II.

1. Degree and rate of implementation by experimental hospitals of the recommendations transmitted by consultants.

2. Alterations of pre-existing conditions which were initiated by and occurred within both experimental and control hospitals after completion of the consultation program.

Independent variables were categorized into two areas, manipulated and fixed. The independent variable, consultation, was manipulated by the investigator. Fixed independent variables for Phase I analysis were categorized into four areas:

1. Hospital Characteristics

   Biographical data about the hospital and its environment, e.g., the number of beds, proximity to medical teaching centers. (See Appendix H, pp. H-1a-c)

2. Staff Characteristics

   Objective data about staff of hospital (administrative and medical), e.g., degree-holding administrator, age of medical staff, percent of G.P.'s to specialists, etc. (See Appendix H, p. H-1b for full listing.)

3. Interviewer-Interviewee Characteristics

   e.g., number of interviewers, number of interviewees, etc.

4. Consultant Characteristics

   e.g., attendance at orientation and training sessions, transmittal of recommendations on time, etc.

Numbers three and four above are a special type of independent variable and are technically known as intervening or conditioning variables. The rationale underlying the collection of "consultant" and "interviewer-interviewee" data derives itself from the methodological fact that uncontrolled-for variables associated with both consultation and interviewing, e.g., differential attributes of consultants and interviewers, etc., may have a contaminating effect of the entire change process (or report of change). A relationship between variables is likely to be spurious, if it is due to or caused by intervention of some third "contaminating" variable or measurement. Therefore inclusion of the above variables in the measuring process serves as a means for taking care of possible uncontrolled-for variables arising from unwanted sources.

Method of Data Collection

Data was collected in several ways for evaluation of the consultation program:

1. Documented source material, e.g., examination of records, reports, etc.
2. Questionnaire instruments
3. Mail and telehpone solicitation
4. In-person interviews

The first three methods were employed primarily for collection of independent variables, while the latter method was engaged for collection of data pertinent to dependent measures.

Illustrative of the first three methods are sources, instruments, and procedures such as the following:

1. Documented source material
    a. *Journal of the American Hospital Association Guide Issue 1967* served as a source of material for data regarding hospital characteristics, e.g., bedsize, type of control, residency and internship program, facilities and services, etc.
    b. Various consultant characteristics data were gleaned from the consultants' curriculum vita.

2. Questionnaire instruments

The "Physician Staff Questionnaire" (discussed above under section entitled "Data Collection for Purposes of Program Development") yielded data on medical staff attributes such as age of staff, size of active staff, specialties of staff, etc. Appendix G,p.G-8 contains a copy of the instruments. Sections 1 through 12 of the questionnaire were used as source material.

3. Mail and telephone solicitation

Used primarily for re-solicitation of materials from non-respondents.

In addition to sources discussed above, other itemized sources were of value in gleaning additional needed information. For example, mileage figures for "sphere of influence" data were obtained from road maps equipped with mileage figures.

Although data for independent variables were gathered from the three sources as discussed above, the "Hospital Attribute" form (Appendix H, p.H-1) was the primary research form utilized for recording of independent variables. Inspection of the form permits one to view data for hospital characteristics (I), medical staff characteristics (II) and consultant characteristics (IV). The reader will note a category entitled "Socio-Economic characteristics of the community in which the hospital is located" (III). This independent variable was later eliminated from the study due to invalid and inconsistent findings of data, e.g., source material differed within each state. Upon full utilization of the above sources and recording of such on the "Hospital Attribute" form, the instrument was brought to the interview scene at the time of the follow-up evaluation visit in order to verify or correct obtained information and to supply missing information.

4. In-person interviews

At the conclusion of the "Recommendation Period", behavioral science interviewers, trained and prepared by PMI, conducted "follow-up visits" to each experimental and control hospital in order to collect data regarding the dependent variables:

a. Changes occurring at both experimental and control hospitals during the consultation period.

b. Action taken by experimental hospitals on recommendations transmitted by consultants, i.e., accept, reject.

c. Supplemental data for background characteristics of independent variables.

Visits to hospitals by interviewers were scheduled for February 15-March 31, 1968, four months after recommendations were transmitted.

Recruitment and Training of Interviewers

Behavioral science oriented professional interviewers were recruited by PMI in order to assist in conducting follow-up visits. Doctoral candidates of the major universities in the area served as source material for recruitment. Final selection of candidates pivoted on their degree of prior experience in the techniques of observation and interviewing, in addition to their knowledge regarding a medical setting.

Ten interviewers, five from the PMI research staff and five recruited from outside sources, were selected to visit the 40 experimental and the 40 control hospitals. In order to somewhat eliminate interviewer bias, individuals were assigned to both experimental and control hospitals. Assignment was based mostly on geographic proximity of hospitals to each other, so that interviewers could reach several in one trip.

Training of interviewers was accomplished in two training sessions of three hours each. Method of training consisted of:

1. An orientation to PMI and the contract

Orientation consisted of a review of project objectives, a discussion of the philosophy and progress of the project, and the purpose of the interview visits.

2. Preparation for hospital encounters

   In preparation for an actual interviewing situation, individuals were introduced to the workings of a "typical" community hospital setting. Simulated interviews were organized by the research staff as practice sessions. Brief case presentations were introduced, and prospective interviewers were afforded an opportunity at role playing an actual interviewing situation .

3. Individual attention

   Each interviewer was presented with a packet of materials consisting of information relevant to the specific hospitals to which he was assigned. In addition to the necessary research forms, included in Appendix H, pp.H-1-4 and discussed in a subsequent section on "research instruments utilized by the interviewer", materials included: a listing of the hospitals for which the interviewer was responsible, scheduled dates of interviewer visits, a set of travel directions to each hospital, and a set of directions for interview procedures. (The reader is referred to Appendix H, p. H-2 for a copy of set of directions distributed.)

The Hospital Interview

Extensive evaluation interviews were conducted at each of the 80 hospitals taking part in the study. Differing, though parallel, interview designs were used in the experimental (consulted) and control (non-consulted) hospitals. Individual interviews* were conducted with five people in the consulted hospitals: physician education coordinator, hospital administrator, president of the medical staff, director of nursing, and a representative from the board of trustees. (The latter two individuals were not interviewed routinely but only when available.) On the other hand, in the non-consulted hospitals interviews were conducted with only two people: hospital administrator and president of medical staff or a substitute.* Interviews lasted approximately one hour for the experimental hospitals and 45 minutes for the controls. All interviews were completed within a three month period of time.

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*In a small percentage of cases, group interviews were held at the request of the hospital.

Interviews in both consulted and non-consulted hospitals focused on obtaining data regarding: 1) changes** having occurred during the "Recommendation Implementation Period" and 2) verification and supplementation of information on the "Hospital Attributes" form. In the experimental hospitals, additional information was gathered regarding the action taken by the hospital on recommendations which had been submitted by the consultant four months previously.

Research Instruments Utilized by Interviewers

The following instruments were utilized by the interviewers for collecting the data.

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*Because PMI solicited cooperation and effort from the non-consulted hospitals without providing any immediate service or benefit to them, it was deemed necessary to minimize the burden of the hospitals' time commitment. Consequently the research staff requested only the two interviews in contrast to the three-five interviews at consulted hospitals. It was assumed that the two interview designs were capable of producing comparable data. Statistical tests of this hypothesis proved it correct, i.e., there were no significant differences in the number of reported changes as a function of the number of persons interviewed. (t=.88)

**Change in community hospital continuing medical education programs.

1. "Interview Guide Sheet"

The "Interview Guide Sheet" (Appendix H, pp. H3a-b was used both in experimental and control hospitals to elicit information relevant to "changes" occurring within both groups of hospitals during the four month interval designated as "Recommendation Implementation Period". Use of this form served to standardize the reporting process--thus ensuring a more valid and reliable collection of data. The first question, an open-ended one, was designed to elicit responses in a non-restricted fashion: "What changes have been initiated?" Subsequent questions related to specific areas of hospital functioning, e.g., budget, facilities and services, etc. Questions attempted to investigate all aspects of hospital functioning.

2. "Recommendation Review" Form

The "Recommendation Review" form,(Appendix H-4)which was used in experimental hospitals only, embodied a listing of the recommendations sent by the consultant to the hospital. The purpose of the form was to determine the implementation status of recommendations. On attached sheets next to the listing of recommendations, space was provided for recording (by the interviewer) of actions taken by the hospital relating to recommended items. Three possible classifications of actions were indicated: 1) Yes--denoting acceptance and implementation of recommendation; 2) No--denoting rejection; and 3) Partial Implementation indicating some action taken but not fully operational. A separate attached sheet was used for each individual interviewed.

3. "Hospital Attribute" Form

As discussed previously, available data for independent variables were recorded by the research staff on the "Hospital Attribute" form (Appendix H, pp H-1a-c). The instrument was then brought to the interview scene in order to verify or correct recorded information.

Having collected all pertinent data at the interview scene, the interviewer returned the forms to PMI. A short meeting was held with each interviewer in order to review hospital reports and discuss any problems encountered.

Data collected by the interviewers were received by PMI primarily in the form of the response given by the interviewer. It was the task of the research staff to translate the response into measurable terms, that is, to process the data--the discussion of which is the focal point of the forthcoming section.

PROCESSING OF DATA

Processing of data refers to those steps and or measures that are taken in order to get the data ready for analysis. Stated in other terms, data processing translates raw data into quantifiable or descriptive measures for analysis.

Before discussing data processing, which was done throughout Phase I at various steps, it seems worthwhile to digress for a moment to reiterate and summarize the development of the study to this point: research objective of the study was to assess and evaluate changes in the continuing medical education programs of community hospitals resulting from a series of consultations by visiting medical educators. Changes constituted the major dependent variables and were operationally defined as stated in the section "Data Collection and Research Instruments", p. 32. Two types of change measures emerged: those collected in both experimental and control hospitals; and those collected in experimental ones only.

It is the purpose of the present section to inform the reader of the process applied to the data in order to "ready" it for analysis. The nature of raw data collected will be discussed as will transformation of this data into measurable terms. The dependent measures will be presented first, followed by a discussion of the transformation of independent measures.

Processing of Dependent Measures

Change Measures Gathered in Both Experimental and Control Hospitals

The research instrument used to gather change data was the "Interview Guide Sheet" as discussed under a preceding section of the present report.

Separate sheets (responses) of data emerged for each person interviewed (five in experimental, three in control). Raw data was in the form of approximated responses of the interviewee as to what had "changed" in various areas of the hospital.

The first task set before the research staff was to compile data elicited from the various interviewees at each hospital in order to determine any duplication of reported changes. That is, in some instances the same change was reported by a number of interviewees at a hospital. Care was then taken to record such duplicate reports as only one change.

After having established the number of "changes" occurring within the hospital as determined by reports of interviewees, the research staff was then faced with the question of validity--were all "reported changes" "valid changes", that is, were they tangible and quantifiable?

"Reported changes" were to satisfy three criteria established by the research staff in order to qualify as a "valid reported change". Changes not meeting criteria were deleted.

Criteria for "valid reported changes" was as follows:

1. Reported change must be hospital related, i.e., changes occurring in the community at large, for instance, development of a Head Start Program, was not accepted.

2. Reported change must manifest itself in behavioral or physically measurable terms. Change in attitude was not accepted, unless accompanied by behavioral changes.

3. Some manifestation of a reported change must have occurred within the preceding four month period of time, i.e., "Recommendation Implementation Period".

Having established and verified all changes which occurred during the four month period in each specific hospital, the research staff was then able to classify "changes" into specific categories for analysis.

"Educational" and "non-educational" changes constituted the major breakdown. Categories were operationally defined as follows:

Educational Change--any hospital-initiated change occurring within the four month implementation period which directly related to the education of hospital personnel including physicians, nurses, allied health personnel and other.

Non-Educational Change--any other change that was hospital-initiated and occurring within the four month implementation period, for example, purchase of patient care equipment, development of special care units.

Categorized data were numerically totalled indicating total number of changes (educational plus non-educational), number of educational changes, and number of non-educational changes.

Change Measures Gathered in Experimental Hospitals Only

As discussed previously, the "Recommendation Review" form was utilized by the interviewers in order to determine the implementation status of the recommendations submitted to experimental hospitals.

As in the case of the "reported change" data, a separate set of responses emerged for each person interviewed. However, only two to three interviewees, administrator, physician education coordinator and at times the director of nursing (if the recommendation pertained to nursing education) were required to participate in this portion of the interview. Raw data was collected for each recommendation in the form of discrete responses to three possible categories: yes, no, or partially implemented.

The major objective of data transformation was to determine the nature and rate of recommendation implementation for each hospital. The first task set before the project staff was to determine the action taken by the hospital to each specific recommendation, i.e., implementation status, as reported by interviewers.

In order to determine the implementation status (yes, no, partial) of each recommendation, the following criteria were established:

1. When all individuals interviewed unanimously agreed upon the status of a recommendation, it was classified accordingly.

2. When agreement concerning a recommendation was not unanimous, the response of that individual whose hospital function most closely corresponded to the nature of the recommendation was used.

Three degrees of implementation status were used:

1. Full or complete implementation--implementation or adoption of recommendation was completed during the four month implementation period. Throughout the present report the term "I" will be used to refer to full or complete implementation.

2. Partial implementation--process necessary to fully implement recommendation was started, but not necessarily completed during implementation period.

Two varieties of partial implementation emerged: (1) instances in which recommendations were reviewed and accepted for further action, e.g., sent to a committee and (2) instances in which recommendations were partially implemented but could not be completed within the alloted four month implementation period. The term "P" will be used throughout the present report to designate partial implementation.

3. Rejection--hospital rejected or took no action on the recommendation. The term "R" will be used throughout the present report to designate rejection.

A further grouping of recommendations were those recommendations which were implemented to any degree, that is, fully or partially. The term given to this classification was "IPI" and denotes the toal number or percentage of recommendations which any positive action was taken.

Implementation rates, i.e., degree of implementation of recommendations, were established for each hospital. The following measures, such as the hypothetical one illustrated in Table 5, were determined.

Table 5

Hypothetical Example

Implementation Status of 20 Recommendations Transmitted by Consultant

RECOMMENDATION STATUS	NUMBER	PERCENT
Complete Implementation ("I")	15	75% (15/20)
Partial Implementation ("P")	2	10% (2/20)
Complete plus Partial Implementation ("IPI")	17	85% (17/20)
Rejected ("R")	3	15% (3/20)

I and IPI rates established for each individual hospital may be found in Appendix J, p. J-1.

Recommendations were further broken down by type. Classifications consisted of educational and non-educational and were operationally defined in the same way as hospital change measures.

Educational Recommendation-any recommendation which directly related to the education of hospital personnel including physicians, nurses, allied health personnel and others.

Non-Educational Recommendation-any recommendation that did not specify a primary educational objective, for example, purchase of patient care equipment, development of special care units.

Thus, for each hospital the following sets of data were established:

Total number of recommendations transmitted by the consultant to the hospital, e.g., 20
    Number of educational--16
    Number of non-educational--4

More important, however, was the application of the breakdown of recommendations by type, i.e., educational--non-educational, to the degree of implementation categorization. In keeping with the example given in Table 5, of the 20 recommendations transmitted by the consultant to the hospital, 15 (75%) were fully implemented and 2 (10%) were partially implemented. This constitutes a "degree or rate of implementation" categorization for total recommendations.

Sixteen recommendations were educational in nature, and four were non-educational in nature. The educational and non-educational recommendations were further broken down by degree of implementation. Table 6 illustrates this breakdown.

Table 6

Hypothetical Example

Educational and Non-Educational Breakdown by Implementation Status of 20 Recommendations Transmitted by Consultant

RECOMMENDATION STATUS	TOTAL		EDUCATIONAL		NON-EDUCATIONAL	
	Number	%	Number	%	Number	%
Total recommendations transmitted	20		16		4	
Implementation:						
Complete ("I")	15	75%	14	85.5%	1	25%
Partial ("P")	2	10%	2	12.5%	0	0%
Complete plus partial ("IPI")	17	85%	16	100.0%	1	25%
Rejected	3	15%	0	0%	3	75%

In addition to categorizing recommendations in quantitative terms, the data were also prepared for non-quantitative, content analysis.* Content analysis was performed on both recommendations submitted to the hospital and recommendations implemented by the hospital. In order to prepare the data for content analysis the following steps were undertaken:

1. Specific categories were established to determine what "types" of recommendations were made and implemented for each hospital. As discussed previously, the major typology breakdown was educational and non-educational.

2. Data transformation of the study's dependent measures thus allowed analysis to be conducted (as discussed in the next

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*An overview of "quantitative" versus "content" analysis is provided for the non-technical reader.

Quantitative analysis, which composed the bulk of analysis performed on data in the present study, refers to the method of analysis whereby measures taken on variables are translated into mathematical language, i.e., numbers, percentages, propositions, ratios, etc.

Statistical methods are then employed as techniques to describe and evaluate the data. These methods enable one to state precisely--in mathematical language--the relationship between variables.

Not all data, however, are amenable to statistical analysis. Further, "statistical analysis" does not "tell the whole story". In both instances, either as a substitute or a supplement, a type of analysis called content analysis is performed.

Content analysis, whereby verbal responses are subjected to analysis, is an explanation of content for research purposes. That which makes content analysis systematic and objective are the following points:
1. Categories--explicitly defined
2. Methodical classification of all material
3. Some quantitative measurement employed

chapter) to determine: 1) what "types" of recommendations were made by consultants; and 2) what "types" of recommendations were most frequently implemented by hospitals and what "degree" of implementation occurred for various "types" of recommendations.

Processing of Independent Measures

All heretofore discussed data transformations have dealt with the dependent measures gathered in the present investigation. The reader will recall that various independent measures, i.e., hospital and medical staff characteristics, consultant and interviewer data, were also collected.

Raw data for independent variables were in one of three forms:

1. Purely discrete data
    - a. Dichotomous categories--possibility for responses to fall into only one of two categories, e.g., either yes or no, either full-time or part-time
    - b. Trichotomous, tetrachotomous, etc.--possibility for responses to fall into only one of three, four, etc. categories, e.g.

        Degree possessed by hospital administrator

        1. Degree in Hospital Administration
        2. M.D.
        3. R.N.
        4. No degree

        Variable could occupy only one of the above four groupings
2. Frequency data

    Frequency data answers the question "How many?"

Essentially it is counting data, e.g., number of beds in the hospital. Unlike purely discrete data, frequency data can be ordered. For example, a hospital with 20 beds is said to have more beds than a hospital with 10. Oftentimes such data is treated as continuous data for purposes of analysis.

3. Continuous data

Unlike the above two categorizations of data, which can fall at separate points on a scale, e.g., 0, 1, 2, 3, etc., continuous variables are able to occupy an infinite number of in-between values. For example, in the present study, the variables of "age of administrator" is a continuous variable, that is, it is possible for the administrator to be 40, 40¼, 40½, etc.

In the case of the independent variables, transformation of the data was synonymous with descriptive analysis, and as a result the bulk of it will be discussed in the following chapter.

RESULTS

The objective of the present section is to describe aspects of the analysis process and to present relevant findings. Most of the data and findings will be summarized and reported in quantitative form, which presupposes some measurement, and accordingly, requires some mathematical manipulation of the data. Quantitative expressions will, in most instances, be accompanied by qualitative, interpretative, and explanatory comments. In some instances where data was not amenable to quantitative analysis, qualitative interpretations will compose the bulk of data analysis and interpretation. Both descriptive and inferential data analysis* of the dependent and independent measures

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*For the non-technical reader, a brief definition of these terms is provided:

(continued on next page)

will be presented.

ANALYSIS OF DEPENDENT MEASURES

Hospital Change Measures
(gathered in both experimental and control)

In order to describe** what the groups were doing, means ($\overline{X}$'s), that is, average number of changes and their standard deviations, that is how widely individuals vary from group $\overline{X}$, were calculated for each group of the hospitals--experimental and control. The results were yielded as shown in Table 7.

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*(continued)

1. Descriptive statistics

   Descriptive statistics embody an assessment and characterization of the group or sample. In giving an adequate description of the data one usually characterizes what is "typical" of the group and indicates how widely individuals in the group vary, i.e., are they similar or different with respect to each other.

2. Inferential statistics

   Inferential statistics make deductions or conclusions regarding differences in data based upon statistical tests of significance. The process of drawing inferences, making predictions, and testing significance are examples of sampling or inferential statistics.

**Descriptive statistics were in some instances utilized for their own worth, but in the bulk of cases used in order to conduct inferential statistics.

Table 7

$\overline{X}$'s and S.D.'s for Number of Changes Occurring in Experimental versus Control Hospitals (Changes Distributed According to Total, Educational, and Non-Educational)

	Change Data					
	Total		Educational		Non-Educational	
	$\overline{X}$	S.D.	$\overline{X}$	S.D.	$\overline{X}$	S.D.
Experimental (N=36)	23.42	9.13	8.72	4.32	14.69	6.89
Control (N=37)	17.86	9.20	5.57	4.29	12.30	7.21

Inferential analysis (t tests of significance between mean number of hospital changes) conducted on the data yielded the following findings (Table 8). When total changes were considered, a statistically significant greater number of changes were found to have occurred at experimental hospitals than at controls. (t = 2.55; for 71 degree of freedom, significant beyond the .05 level of significance.) When looked at in terms of educational and non-educational breakdown of data, the following results emerged. Analysis of educational changes resulted in a t = 2.11, which for 71 degrees of freedom is significant beyond the .05 level of significance, the experimental hospitals having a significantly higher mean number of educational changes. Analysis of non-educational changes showed no statistically significant difference (t = 1.42). However, visual inspection of Table 8 permits one to view the occurrence of a higher (although not reaching statistical significance) mean number of non-educational changes occurring in experimental hospitals. This data suggests that both groups of hospitals had similar capacity for change.

Table 8

Phase I

COMPARISON OF REPORTED CHANGES: EXPERIMENTAL & CONTROL HOSPITALS

	TOTAL CHANGES		
	$\bar{X}$	S.D.	t
Exp.	23.42	9.13	2.55●
Cont.	17.86	9.20	

	ED. CHANGES			NON-ED. CHANGES		
	$\bar{X}$	S.D.	t	$\bar{X}$	S.D.	t
Exp.	8.72	4.32	2.11●	14.69	6.89	1.42
Cont.	5.57	4.29		12.30	7.21	

● = $p < .05$

Recommendation Implementation Measures (gathered in Experimental Hospitals only)

Descriptive analysis was done on recommendation data in order to determine:

1. What was the nature and extent of recommendations transmitted by consultants to hospitals, and
2. What was the nature and extent of recommendations implemented by hospitals.

A total number of 443 recommendations was received by 37 experimental hospitals, 353 in written form and 90 made orally by the consultants (Table 9). Eighty-eight percent of the recommendations were educational in nature. The mean number of recommendations (written plus oral) per hospital was 11.97 with a standard deviation of ±4.21. Individual hospitals received anywhere from one to 23 recommendations. While oral recomdations played an important part in the consultation effort, documentation of written recommendations was much more precise and consequently assessment of their outcomes more reliable. Results reported in the present section will be limited to analysis of written recommendations.

Table 9

Nature and Frequency of Recommendations Transmitted to Experimental Hospitals

EXP. HOSPITALS		40
HOSPITALS RECEIVING RECS.		37
RECOMMENDATIONS TRANSMITTED	total	443
	written	353
	oral	90
TOTAL NUMBER RECS./HOSPITAL	mean	11.97
	S.D.	4.21
	range	1-23
EDUCATIONAL RECS.		388(88%)

An obvious feature of the 353 recommendations transmitted was their heterogeneity. For purposes of describing the nature and variety of these recommendations, a content analysis classification scheme was devised and each recommendation was assigned to one of the categories. At the most general level, the categories were divided into educational and non-educational recommendations. Educational included any recommendation which had a primary objective of affecting the education of hospital personnel, e.g., "implement grand rounds," "initiate a team approach to education programs centered on the coronary care unit," "medical staff and administration jointly appoint a DME." Any recommendation that did not specify a primary educational objective or was not directly related to the education of hospital personnel was placed in the non-education category, e.g., "develop an ICU," "provide salaried emergency ward staff coverage," "investigate the possibility of providing home care services."

Educational recommendations were further classified as relating to physician continuing education or relating to continuing education of nurses or allied health practitioners. Under physician education, three classes of recommendations were established: 1. resources for program development including personnel, facilities, materials and financial support; 2. planning for educational programs including assessment of staff education needs, program design and program scheduling; and 3. program implementation including institution of case-centered education activities, implementation of subject-oriented programs and development of house-officer training.

On the other hand, content of non-educational recommendations was not further delineated by sub categories due to the low frequency of these recommendations and their miscellaneous and discrete character. Table 10 provides a content analysis of the recommendations indicating the numbers of recommendations within each classification and their implementation status. For a more detailed breakdwon of the recommendations and their implementation status, refer to Appendix J,pp.J2a-f.

Of the 353 recommendations transmitted to the hospital, 318 (90%) were educational in nature, 296 (84%) specifically referring to physician education and 22 (6%) referring to nursing and allied health education. Since 84 percent of the total number were subsumed under the general category of physician education, it was observed that consultants confined their efforts to the task of developing the medical education program in the community hospital.

Further inspection of the 296 physician education

Table 10

Numerical Summary of the Implementation
Status of General Categories of Recommendations
at the End of 4 Months

	Total	Full Implementation	Partial Implementation	Rejection	No Response
TOTAL NUMBER OF RECOMMENDATIONS	353	130	69	151	3
I. EDUCATIONAL RECOMMENDATIONS	318	118	64	133	3
A. PHYSICIAN EDUCATION RECOMMENDATIONS	296	109	60	124	3
1. EDUCATIONAL PROGRAM RESOURCES	140	46	33	60	1
a. Financial Support for Program Development, including Hospital, Staff, and Other Sources	24	7	8	9	
b. Educational Facilities and Materials, including Audio-Visual Aids and Library Provisions	27	9	5	12	1
c. Hospital Personnel, including DME, Pathologist, Secretaries and Librarian	24	11	3	10	
d. External Educational Resources, including Education Agencies, Visiting Consultants, and Outside Speakers	44	14	10	20	
e. Regional Interhospital Collaboration, including DME, Funds, Lectures and Teaching Personnel	21	5	7	9	
EDUCATIONAL PROGRAM PLANNING	62	21	11	29	1
a. Program Assessment, including Evaluation of Programs, Staff Needs and Interests, and Community Needs	7	2	1	4	
b. Program Design, including Educational Goals, Structuring of Activities, and Rotating Responsibility for Educational Planning and Implementation among Staff	32	11	8	13	
c. Scheduling and Attendance of Educational Programs, including Preparation and Publicity of Programs, and Keeping Attendance and Minutes of Meetings	23	8	2	12	1
3. EDUCATIONAL PROGRAM IMPLEMENTATION	94	42	16	35	1
a. Patient or Case Centered Education Activities, including Grand Rounds, CPC's, Case Presentations, and Case Literature Review	52	24	9	19	
b. Subject-oriented 'Education Activities, including Courses and Lecture Programs, Discussion Groups, and Specialty care Education Programs	18	7	4	7	
c. Routine Hospital Meetings (Business and Committee) and the Education Program	8	4	2	2	
d. House Officer Training, including Resident and Intern Training	11	6	1	3	1
e. Miscellaneous Education Programs, including Self-assessment Tests and Sending Physicians Out for Postgraduate Training	5	1		4	
B. NURSING AND ALLIED HEALTH RECOMMENDATIONS	22	9	4	9	
1. RESOURCES, including Director of In-service Teaching, Visiting Nurse Consultants, and Inter-hospital Director of Nursing	6	1	2	3	
2. JOINT PHYSICIAN-NURSE EDUCATION ACTIVITIES, including Mutual Physician-Nurse Planning and Programs	13	7	2	4	
3. ESTABLISHMENT OF IN-SERVICE EDUCATION, including Teaching of Nurses by Medical Staff and Programs for Paramedical Personnel	3	1		2	
II. NON-EDUCATION RECOMMENDATIONS, including Making Wider Use of Emergency Room, Establishing Clinics, Establishing Full or Partially Paid Department Chiefs, Developing Plans Relating to Regional Services	35	12	5	18	

recommendations revealed that 140 (47%) related to providing resources for the physician education program. Resource-related recommendations were equally represented in the following subcategories: hospital and staff financial support for program development, educational materials and facilities, personnel support for the program, and inter-hospital sharing of education resources. Each of these sub-categories averaged 24 recommendations. Forty-four recommendations, however, were assigned to the sub-category of utilization of outside resources. The occurrence of a higher frequency in this sub-category may be accounted for by 16 recommendations calling for utilization of extra-hospital teachers in the education program.

The second major category under physician education recommendations, educational program planning, contained fewer recommendations than the resource category. Of the 62 (21%) recommendations in this category, 32 (52%) pertained to designing the program such as stating program goals, structuring the activities, assigning staff responsibility for implementing the program. The mechanical aspects of program, such as devising a time schedule, publicizing the sessions and keeping attendance records, received 23 (37%) recommendations. Recommendations pertinent to assessment of staff educational needs and interests and program evaluation, a more difficult task in program planning, were made in only 7 (11%) instances. This may have been a reflection of the consultants' judgements that most community hospitals were not ready to take on something so rigorous at that time.

The third major category, program implementation, received 94 (32%) of the physician education recommendations. Fifty-two (55%) of these recommendations were in the area of patient centered education activities, such as instituting grand rounds, CPC's, or mortality conferences. The high frequency of this sub-category reflects PMI's philosophy that the community hospital education program should be based on the specific patient care problems of that hospital and that such a program would be more relevant to the education needs of the staff physicians. Eighteen (19%) recommendations transmitted specified implementation of subject-oriented education activities, such as lectures, courses, and specialty-care education programs. Eleven (12%) recommendations pertained to the development or improvement of house officer training programs.

In the process of advising community hospitals as to development of their physician education program, the consultants provided some help and recommendations regarding continuing nurse and allied health education programs when deemed appropriate. Twenty-two (7%) of the total number of educational recommendations were made in this area of which 13 (59%) related to joint physician-nurse education activities, such as inviting nurses to physician education programs and organizing special joint physician and nurse education sessions on the care of patients in such specialty-care units as the ICU and CCU. Other nursing recommendations pertained to developing personnel resources for the program such as inviting visiting nurse consultants and appointing directors of in-service teaching and establishing in-service nurse education programs.

Non-education recommendations numbered 35 (10% of total number of recommendations transmitted). Little relationship existed between the various recommendations in this category other than they had little or no specified bearing on the development of education programs. Examples of such recommendations are making wider use of emergency room, establishing specialty clinics, and establishing department chiefs. None of the non-educational subcategories contained more than 3 recommendations.

Regarding the overall fate of the 353 recommendations transmitted by consultants to hospitals during Phase I, the following figures emerged: at the end of the four month implementation period, 130 (37%) of the recommendations were fully operational, 69 (20%) were partially implemented, and 151 (43%) were rejected. One hundred ninety-nine (57%) of the recommendations had been accepted and had some action taken on them (IPI rate).

In reviewing the implementation rates within the various recommendation categories, it was found that the implementation rates were quite consistent with the overall implementation rate of all 353 recommendations. This held true at the level of educational and non-educational recommendations, with the non-educational having a slightly lower full plus partial implementation rate (IPI), that is, 49 percent as compared with a 57 percent IPI rate for educational recommendations; at the physician education level (IPI=57%) and the nursing and allied health education level (IPI=59%); and at the sub-category levels within physician education, including program resources (IPI=56%) and program planning (IPI=52%). The program implementation level of physician education had a slightly higher IPI (63%).

Only upon further inspection of more detailed classification were discrepencies in implementation rates observed, and even these were not significant. Lower IPI rates occurred in the sub categories of scheduling education activities (48%) and assessing education programs (43%). This latter figure is based upon only seven recommendations of which three were fully or partially implemented. Higher IPI rates occurred in the areas of instituting joint physician-nursing education programs (69%), developing house officer training (73%) and implementing case-oriented education activities (63%). Caution should be taken in interpreting these data, as the results are based on very low frequencies.

The 10 most frequently made recommendations and their implementation status at the end of four months are listed in rank order in Table 11. The eleven types of recommendations listed account for over half of the total number of recommendations. This fact suggests that these recommendations may reflect some of the most common educational needs in community hospitals, or it may indicate something about consultants' biases.

ANALYSIS OF INDEPENDENT MEASURES

The research question posed for purposes of the present study was of the nature: What is the effect of X on Y; X being independent measures, Y being dependent measures. In testing the manipulated (treatment) independent variable, that of consultation, the question was of the nature: What is the effect of consultation on program development, i.e., change measures. The question was answered by determining nature and extent of the recommendations implemented by experimental hospitals, and by comparing consulted versus non-con-

Table 11

Most Frequently Submitted Recommendations

Number Submitted		Number Fully Implemented after 4 Months
31	Use guest educators	11
22	Hospital provide education budget	6
19	Establish case presentations	9
17	Develop library	7
15	Develop inter-hospital education program	2
13	Establish/develop DME position	6
11	Develop intern/resident program	6
9	Use external resources for program development	2
9	Establish formal lecture series	1
9	Rotate staff responsibility for planning/implementing program	3
9	Restructure education program	2

sulted, or experimental versus control hospitals, on the hospital change measures, as discussed previously.

It will be recalled by the reader that a corollary research objective of the present study was to determine factors within the hospital which may affect (either facilitate or inhibit) the establishment and implementation of a continuing education program. These factors were defined as fixed independent variables and are delineated in Appendix H-1 of the present report. In testing fixed independent (classification) variables, the research question became: What is the effect of hospital characteristics, medical staff characteristics, consultation characteristics, etc. on impact of consultation.* These "fixed" variables are the focal point of the ensuing discussion.

Transformation of "fixed" independent measures, as noted in the preceding chapter, was synonymous with descriptive analyses. Descriptive analyses for the independent measures detail the type of data and form of data description yielded for each variable. Most of the independent measures were not described for their own worth, but merely categorized to accomodate inferential analysis.

Since "type" of data yielded dictated method of inferential analyses performed, independent measures are also presented in terms of the nature of the data. Two major categories or "types" of data emerged

1. Categorical data--possibility for responses to fall within only 1 of 2 or more categories
    a. Either/or data (2 categories only)
    b. Multicategorical data (3, 4, 5 categories)
2. Continuous data--possibility for responses to occupy an infinite number of in-between values

Variables were distributed into four categories: hospital characteristics, and medical staff characteristics, which will be discussed as a unit, followed by discussion of consultant characteristics, and interviewer-interviewee characteristics.

Hospital and Medical Staff Characteristics

A listing of the hospital and medical staff charac-

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*Dependent measures utilized to define impact of consultation were:
1. "I" and "IPI" rates of recommendations
2. Number of reported educational changes.

Because of time limitations, due to the awarding of the extension of the contract for two more years (Phase II) and the subsequent amount of preparation needed to implement Phase II, it was not possible to conduct analyses of independent variables with the dependent measure of number of reported educational changes.

teristics used in analysis are presented in Table 12. Data for various additional characteristics, as listed on the "Hospital Attribute" form (see Appendix H-1) was collected although not analyzed. In such instances either 1) inadequacy of data (invalid, unreliable, or insufficient), or 2) insufficient time, precluded a more complete analysis.

Column 1 of Table 12 details the format of data description for each variable. Distribution of data into categories is presented in column 2 of Table 12 Respective methods of analysis used are presented in Column 3, and results in Column 4. Analysis of results will be discussed further in the present section.

Consultant Characteristics

As discussed under the data collection section of the present report (pp.32 - 33) inclusion of consultant and interview characteristics in the measuring process served as a means of taking care of possible uncontrolled-for variables arising from unwanted sources.

Although some of the various consultant characteristics were originally solicited from the hospital, more reliable data was gathered from PMI records for various characteristics. As a result, the following characteristics* associated with the entire consultation process emerged (Table 12).

Unlike the hospital and medical staff characteristics which are, for the most part, self-explanatory in nature, the consultant and interviewer characteristics presented in Table 12 require operational definitions, which are presented below.

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*A few are taken directly from the "Hospital Attribute" form (Appendix H-1) many are modified or further explicated versions of those appearing on the form, while still others are new variables acquired by reference to PMI records.

Table 12

Relationship of Hospital, Medical Staff and Consultation Characteristics to Full Implementation ("I") and Full plus Partial Implementation ("IPI") of Recommendations

	Format of Data Description	Nature ("type") of Data	Method of Analysis	Result	
				"I"	"IPI"
I. HOSPITAL ATTRIBUTES					
Bedsize	left in form of counting data	continuous	Pearson r	+.03	-.11
Sphere of influence (proximity to medical school)	left in form of counting data	continuous	Pearson r	-.001	+.18
States in which hospitals are located	Maine vs. Mass. vs. N.H. vs. R.I.	multi-categorical	F	.55	1.62
Administrators holding degree in Hosp. Adm.	yes/no	categorical	t test	1.41	2.83**
Type of control of hospital	voluntary non-profit vs. "other"	categorical	t test	1.25	1.10
ICU facility±	yes/no	categorical	t test	.09	1.33
Budget for education	yes/no	categorical	t test	.89	.90
DME	yes/no	categorical	t test	.08	.22
Education committee	yes/no	categorical	t test	.47	.69
Resident and Intern program	yes/no	categorical	t test	.75	1.30
Informal nursing education program	yes/no	categorical	t test	.95	±±
External medical Audit	yes/no	categorical	t test	1.93	2.07*

± A sheer time factor precluded systematic analysis of all sixteen facilities and services as listed on the "Hospital Attribute" form.

±± Data was insufficient to perform computation.

** P $\leq$ .05

** P $\leq$ .01

Continuation of Table 12

Relationship of Hospital, Medical Staff and Consultation Characteristics to Full Implementation ("I") and Full plus Partial Implementation ("IPI") of Recommendations

	Format of Data Description	Nature ("type") of Data	Method of Analysis	Result "I"	Result "IPI"
II. MEDICAL STAFF ATTRIBUTES					
Ratio of active staff to number of occupied beds	left in form of counting data	continuous	Pearson r	-.18	.19
% specialists to G.P.'s	left in form of counting data	continuous	Pearson r	.18	.19
% specialists board certified	left in form of counting data	continuous	Pearson r	.08	±±
$\overline{X}$ age of staff	left in form of counting data	continuous	Pearson r	-.30*	-.36*
% active staff with other hosp. affiliations	left in form of counting data	continuous	Pearson r	-.20	-.05
II. CONSULTANT CHARACTERISTICS					
PMI experience of consultant	yes/no	categorical	t	1.34	.12
Attendance at consultant orientation	yes/no	categorical	t	1.88	1.79
Number of visits made by consultant to hospital	1 visit vs. 2 or more visits	categorical	t	0	0
Transmittal of recommendations on time	yes/no	categorical	t	.88	.31
Availability of data from PMI forms used by consultant	low (0-3 forms avail. vs. high (3-5)	categorical	t	1.70	1.27

** $P \leq .05$

Data was insufficient to perform computation.

Table 12a

Relationship of Interviewer-Interviewee
Characteristics to Number of Reported Changes
at Both Experimental & Control Hospitals

	Format of Data Description	Nature ("type") of Data	Methods of Analysis		Result
IV. INTERVIEWER-INTERVIEWEE CHARACTERISTICS					
Number of Interviewees	<3 vs. 3 or more individuals interviewed	categorical	t	Cont.	.88
				Exp.	±±
Quantity of data collected by Interviewers (number of hospital changes)	Interviewer A vs. B vs. C	multicategorical	F		3.54**
	Interviewer D vs. E vs. F	multicategorical	F		8.34***

±± Data was insufficient to perform computation.

** $P \leq .05$

*** $P \leq .01$

1. PMI experience of consultant

   Divided into two groups: prior experience versus no prior experience, prior experience being defined as working in some capacity with PMI and as a result being familiar with its philosophy and forms (instruments). (See Appendix A for review of Stearns's article, "Positive Approaches to Continuing Medical Education".

2. Attendance at consultant orientation

   Divided into two groups: attenders versus non-attenders in reference to initial consultant orientation session (June, 1967)

3. Number of visits made by consultant to hospitals

   Divided into two groups on basis of visits: one visit versus two or more visits

4. Transmittal of recommendations on time

   As previously noted, recommendations were to be transmitted to the hospital by November 1, 1967. Hospitals were categorized into two groups on the basis of whether recommendations were transmitted to them on or around November 1, 1967 versus those hospitals whose recommendations were transmitted to them well after November 1, 1967.

5. Availability of data from PMI forms for use by the consultant

   Concerned with forms to be filled out by the hospital and to be made available to the consultant for his use while devising recommendations (discussed under "Data Collection for Purposes of Program Development," pp. 28-30) Categorized into two groups:

   a. Low: 0-3 forms available to the consultant, versus

   b. High: 3-5 forms available to the consultant

Interviewer - Interviewee Characteristics

1. Number of interviewees (people interviewed in the hospital)

   Data was categorized into two groups as follows:

   a. Less than 3 interviewees, versus

   b. 3 or more interviewees

   Separate analyses were conducted on experimental and control groups.

2. Quantity of data collected by interviewers

   Hospitals were categorized into five groups according to the interviewer who visited the hospital. Analyses were conducted in order to determine if a significantly larger degree of variance occurred in the number ofreported changes as a function of the interviewer who was collecting the data.

Categorical Data

With reference to Tables 12 and 12a (pp.61 - 63), all "categorical" data described as either/or (yes/no, or reduced to two categories) underwent a test of significance between mean ($\overline{X}$) implementation rates ("I" and "IPI") for the two groups (e.g., yes vs. no). Significantly yielded findings are presented below.

Statistical Significance (defined as .05 or less level of probability*)

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*Probability of 5 chances or less in 100 that observed differences are due to chance factors.

1. External medical audit and IPI rate

   Those hospitals possessing an external medical audit appeared to have a significantly lower IPI rate ($t=2.07$, $p<.05$). $\bar{X}$ IPI with external medical audit was 41.4% ($N=11$); $\bar{X}$ IPI without external medical audit was 64.8% ($N=26$). The present finding may categorize the external medical audit as an inhibiting factor.

2. Degree in hospital administration and IPI rate

   Those hospitals in which the administrator possessed a degree in Hospital Administration yielded a significantly lower IPI rate ($t=2.83$, $p<.01$). $\bar{X}$ IPI with a degree was 37.6% ($N=10$); $\bar{X}$ IPI without a degree was 65.4% ($N=27$). The above finding seems to indicate that possession of an MHA may be an inhibiting factor.

Trend Toward Significance

Although not reaching statistical significance, a trend, both "strong" and "moderate" in that direction was discernable for a number of variables. "Strong" is defined as $p=<.10$. "Moderate" indicates $p=<.30$ or less. Probabilities above .30 were considered negligible, and the variable was discounted as a possible facilitating or inhibiting factor. (The above definitions of "strong" and "moderate" will apply to all analyses discussed in the present chapter).

Strong Trends

1. Existence of external medical audit and I rate.

   Those hospitals utilizing an external medical audit system yielded a lower full implementation rate of recommendation ($t=1.93$, $p\leq.10$) $\bar{X}$ I with a medical audit was 26.2% ($N=11$); $\bar{X}$ I without a medical audit was 43.4% ($N=26$).

2. Availability of data from PMI forms for use by consultants and I rate.

   Those hospitals who completed 3-5 PMI data collection forms for use by the consultant had a higher full implementation rate. ($t = 1.70$; $p < .10$) $\bar{X}$ I with high frequency of forms was 49.3% (N=12); $\bar{X}$ I with low frequency of forms was 33% (N=25).

3. Attendance at consultation orientation and both I and IPI rates.

   Those hospitals whose consultants attended the orientation meeting had a higher I ($\bar{X}$= 43.7%, N=26) and IPI ($\bar{X}$=64.3%, N=26) rate than those hospitals whose consultants did not attend orientation ($\bar{X}$I=25.5%, N=11); ($\bar{X}$IPI=42.3%, N=11).

Moderate Trends

1. Existence of an Intensive Care Unit (ICU)

   Those hospitals who possessed an ICU unit had a higher full plus partial implementation rate. ($t = 1.33$, $p < .25$). $\bar{X}$ IPI with ICU was 62.6% (N=18); $\bar{X}$ IPI without ICU was 53.9% (N-19).

2. Existence of a residency and intern program and IPI rate.

   Those hospitals who had an intern and resident program had a higher full plus partial implementation rate. ($t = 1.30$; $p < .25$) $\bar{X}$ IPI with program was 73.8% (N=6); $\bar{X}$ IPI without program was 54.8% (N=31).

3. Possession by administration of a formal degree in hospital administration and I rate.

   Those hospitals who had an administrator with a degree in hospital administration had a lower full implementation rate. ($t = 1.41$, $p < .25$) $\bar{X}$ I with degree was 29.4% (N=10); $\bar{X}$ I without degree was 41.5% (N=27).

4. Type of control of hospital and I rate.

   "Other" hospitals, e.g., church operated, profit, yielded higher full implementation rates than voluntary non-profit. (t=1.25, p $<.30$) $\bar{X}$ I rate for voluntary non-profit hospitals was 34.9% (N-29); $\bar{X}$ I rate for "other" hospitals was 50.4% (N=8).

5. Speed of response to PMI invitation and I rate.

   Those hospitals responding within 0-3 weeks yielded a higher full implementation rate than those hospitals who responded within 3 or more weeks. (t=1.28, p .30). $\bar{X}$ I rate for early responders was 41.9% (N=28); $\bar{X}$ I rate for late responders was 27.1% (N=9).

6. Availability of data from PMI forms used by consultant and PMI

   Those hospitals who provided their consultants with more PMI data collection forms had a higher full plus partial implementation rate (t=1.70, $p<.30$). $\bar{X}$ IPI rate of those hospitals providing more forms was 49.3% (N=12); $\bar{X}$ IPI rate of those providing fewer forms was 33% (N-25).

Multicategorical Data

The following characteristics classified as multi-categorical data, as depicted in Tables 12 and 12a, underwent analysis of variance (F tests).

1. States in which hospitals were located

	$\bar{X}$ I rate	F test	$\bar{X}$ IPI rate	F-test
Maine	41,2	.546	71.3	1.62
Mass.	41.6		60.3	
N.H.	37.6		46.1	
R.I.	22.0		42.8	

Analysis of variance (F tests) conducted on the above data yielded findings not reaching statistical significance; therefore there are no apparent differences in $\bar{X}$ implementation rates as a function of the state in which the hospital was located.

Visual inspection of the above data, however, will permit the reader to view that for IPI rate an F of 1.62, denoting a $p=<.10$ indicates a strong trend toward significance. (Massachusetts and Maine yielded higher full plus partial implementation rates.)

2. Quantity of Data Collected by Individual Interviewers

Analyses of the number of reported hospital changes as collected by individual interviewers yielded results indicating that there was a statistically significant difference among interviewers in terms of the amount of data they collected. ($F=8.34$, $P<.01$ for group of 3 interviewers who visited a fewer number of hospitals) and ($F=3.54$, $p<.05$ for group of 3 interviewers who visited a greater number of hospitals)

The observed interviewer bias, it could be concluded, contaminated the findings regarding the number of hospital changes reported by experimental and control hospitals. However, since each interviewer's hospitals included approximately the same number of experimental and control, it can be assumed that the observed bias was distributed somewhat equally between experimental and control hospitals and that the findings were not invalidated.

Continuous Data

All data discussed below, continuous in nature, were subjected to Pearson r correlations. The purpose of analysis was to show how and to what extent concepts of change and independent variables were interrelated. Hospital and medical staff characteristics embody the independent variable; dependent measures utilized were I & IPI rates. Discussion of the following results should be read with reference to Tables 12 & 12a.

Hospital Characteristics

1. Bedsize

No statistically significant correlations were yielded for bedsize and full implementation rates of recommendations. (r=+.03, N=37) or for bedsize and IPI rates (r=-.11, N=37)

2. Proximity to Medical School

Although no statistically significant correlations were yielded, an apparently moderate trend (r=+.18, N=37 p<.10) was noted between medical school influence and IPI. Hospitals located a greater distance from a medical school influence appeared to implement (and/or partially) implement proportionally more of their recommendations.

3. Ratio of active staff to occupied beds:

With the purpose of reflecting the "busyness" of the medical staff, a correlational analysis was undertaken on the above ratio and the implementation rates of recommendations, although no statistically significant relationships were yielded, a moderate trend towards significance appeared for both I & IPI rates. (r =-.183, p<.10, and r =+.192, p<.10, N=37 in both analyses), I rates produced a trend towards positive correlation (i.e. larger the ratio of staff to occupied beds, the greater the I rate) while IPI rates resulted in a trend towards a negative correlation (i.e., lower the ratio, reflecting a less busy staff, the higher the IPI rate)

4. Ratio of active staff to number of beds

Negligible correlation ratios were yielded (r =+.01 and r=+.02).

5. Mean age of active medical staff

   A statistically significant negative correlation ($r=-.35$, $p<.05$) was yielded for $\bar{x}$ age of staff and IPI rate. Also, a strong negative trend ($r=-.29$, $p=$less than .10) was noted for above variable and I rate. The findings seem to suggest that hospitals with a lower mean age for the medical staff implement more of their recommendations.

6. Percent Specialists to G.P.'s

   Above ratio reflected composition of medical staff. Higher ratio indicated a greater % of specialists, while a low ratio reflected greater # of G.P.'s. No statistically significant results were yielded, although moderate trends were discernable. For both I and IPI rates moderate trends ($r=+.178$, $r=+.185$, $p<.20$) towards a positive correlation appeared, indicating that hospitals with a higher concentration (percent) of specialists on the staff tend to demonstrate a trend towards implementing more recommendations.

7. Per cent Specialists Board Certified

   Negligible correlation ratios were yielded.

8. Percent of staff with other hospital affiliations

   No statistically significant findings were yielded, however, a somewhat moderate trend towards a significant negative correlation ($r=.20$, $p=\leq.10$) resulted for I rate implying the fewer staff members with other hospital affiliations, the higher the number of recommendations fully implemented.

DISCUSSION OF RESULTS

Although preliminary and somewhat tentative, results of Phase I research do suggest that:

1. The utilization of an education consultation procedure and process does in fact have a significant impact on the development of continuing physician education in local community hospitals, particularly when short-term selective indicators of perceived change are utilized.

2. The data strongly support the necessity of prior training of the physician consultant if one is to maximize his impact on the hospital.

3. The greater the systematic effort on the part of the medical staff of the hospital in preparing its educational programs (e.g. the use of educational activity sheets and medical staff questionnaires), the greater the likelihood of innovation and change in educational activities.

In short, educationally trained physician consultants, involving community hospital physicians in a systematic effort, do bring about changes in continuing education for physicians. It also follows, though not as systematically documented in the present research, that a variety of administrative and organizational characteristics of the institution will tend to facilitate the rates of innovation and change of educational programming of physicians.

The data at hand are not without some promise for suggesting a feasible strategy for extending education consultation to community hospitals. That difficulties still exist in both the intervention and evaluation of such efforts at altering and improving educational programs for hospital based physicians goes without saying. In the present instance it may be instructive to briefly characterize some of the more explicit difficulties experienced. In the realm of the consultation (intervention) procedures, three significant problem areas arose.

The first relates to the issue of the recruitment and training of the medical consultants to the community hospitals. Since all of the consultants were pursuing this specific activity as a part time task in addition to full time commitments at teaching hospitals (involving programs of service teaching and research), instances of conflict and delimitation of commitment to the consultation requirements were manifested by various members of the education consultant team. The behavioral results were instances of cancellation of meetings with representatives from the experimental hospitals, restriction of the duration of consultations, sporadic participation in pre-consultation orientation activities, and extreme variation in the delays in the completion of field reports and transmission of recommendations to experimental hospitals. It appears that the hospitals of those consultants who attended orientation session implemented more of their recommendations. This finding supports the contention that training of consultants produces positive impact on the consultant's effectiveness and further on educational program development. As a facilitating factor, this finding, coupled with consultants' expressions of feelings of inadequacy in providing consultation, demonstrates support for and value of the proposedsystematic training program undertaken during Phase II.

The second major difficulty in the consultation process was the highly variable utilization of various survey forms (i.e. the educational activities forms and the staff physician questionnaires) by both the medical consultants and the representatives from the experimental hospitals. The resistance to the time and energy required to collect data of pertinence to educational programming was frequently an issue in the consultation and a correlating condition in the ensuing rate of change and innovation in the experimental hospitals.

Thirdly, the impact of consultation on development of physician education programs was found to be highly dependent upon certain intra-hospital circumstances and schedules relating to budgeting, staff procurement, etc. which in many instances appeared to block innovation and change. The primary implication here is the necessity for lead time in the planning and scheduling of intervention with other on-going decision making and scheduling activities (particularly financial) which operate in determining the likelihood of innovation and change.

Regarding the difficulties encountered in the evaluation of such an educational intervention, the following instances are worthy of report. The single most salient difficulty encountered in the evaluation research described here related to the matter of obtaining data concerning the on-going educational activities at the experimental hospitals, prior to and during the consultation process. Specifically two distinguishable issues are involved, the first relates to the general inadequacy of records pertaining to activities of the physician staff within the institution (i.e., hospital records are generally extremely inadequate regarding the content, participation, and the nature of outcomes of educational activities.) The second issue, reflects a lack of commitment to generate and/or a failure to appreciate the potential utility of such information, including data on the hospital staffs' needs and/or willingness to participate as teachers or students in learning activities, in the continuous planning and implementation of educational programming by members of the hospital's medical staff and administration. In the case of the current study, failure to obtain the information, not only had implications for the success of innovation and change in educational programs, but also markedly delimited the variety of analyses to assess the effectiveness of the consultation process e.g. failure to obtain reliable indicators of pre-consultation educational activities prevented the making of comparisons with post-consultation educational activities to assess significance of change. Similarly failure to obtain more systematic data on the attributes of physician staff prevented the more profound examination of the relationship of the medical staff attributes which might relate to increase in rate of educational innovation.

In terms of the ultimate need for evidence of the efficacy of various forms of intervention on the long term change in development of continuing physician education programs, it is concluded that the study during the first year (Phase I) did not use a particularly optimal interval of implementation (i.e. four months) in which to assess the degree or rate of implementation and change. This conclusion is based on the assumption that the time neededto fully affect change in such a complex system as a hospital may exceed the 4 month implementation period that was allotted for evaluation. Furthermore, no opportunity was provided to assess degree of maintenance or continuation of innovation and change. The awarding of the continuation of the study for two additional years (Phase II) provided some opportunities for additional and delayed measures of both implementation and maintenance of innovation of hospital-based physician education programs.

PHASE II

STUDY OBJECTIVES

On April 1, 1968 the extension of Contract No. PH 108-67-170* for two additional years was awarded by the Bureau of Health Manpower** to be effective May 27, 1968. Two years were allotted in order to provide another set of consultations during the first year and to allow time for post consultation data collection, analyses and final report writing during the second year. Several factors contributed to the granting of the extension (subsequently referred to as Phase II). First, Phase I initial findings provided preliminary support for the efficacy of the consultation, and thereby indicated that the consultation warranted further development and study. Second, since consultation appeared to be an effective stimulant to CME program development, the next logical step was to determine the relative impact of various amounts of consultation. To pursue this question Phase II was to incorporate two levels of consultation, "intensive" consultation and "minimal" consultation, which would operationally be defined by the numbers of visits hospitals would receive from consultants. Third, results of analyses, our own observations, and the consultants and local education coordinators statements of felt needs for more information and greater orientation to CME program development indicated the need for more formal training as a supplement to consultation. Development and evaluation of such a training program would be a primary focus of Phase II. And finally, in terms of evaluation, obtaining a true indicator of the impact of consultation was limited by the time factor of Phase I's one year study. The recommendation implementation period allotted during Phase I was too short (4 months) to allow hospitals to fully implement many of the consultants recommendations and occurred at a less than optimal time of the year (November-February) for acting on recommendations. (See Phase I - Dicussion of Results for more detailed discussion of factors leading to the initiation of Phase II)

Phase II objectives are concisely summarized in the Scope of Work provided by the contracting agency. They are as follows:

* Current number is NIH 70-4150

** Current title is Bureau of Health Professions Education and Manpower Training

1. Utilizing experiences and procedures developed in Phase I, continue consultation services to selected community hospitals in the four state region. The consultation service shall be varied so that half of the hospitals receive five visits in a 13 months period (intensive consultation) and half only two visits in that same 13 month period (minimal consultation).

2. Continue and conclude the evaluation of the effectiveness of the consultation method in establishing and maintaining educational activities and the selected community hospitals. Specifically, such evaluation shall include:

    a. The extent to which the recommendations of the contractor are implemented at the community hospital.

    b. An assessment of the relative efficacy of intensive vs. minimal consultation (as defined in 1. above) in the implementation of the contractor's recommendations.

3. Continue to describe the factors, both in the consultative service and in the hospital, which materially affect extended maintenance of physician education programs.

4. Design and execute a training program for physicians who will provide consultation services to community hospitals in the region. The program shall be developed along sound principles of educational methodology. Curriculum shall include units in educational methods and technology, behavioral psychology, available educational resources, utilization of health manpower, and others. Approximately ten consultant trainees shall receive the equivalent of seven (7) man-days of training.

5. Design and execute a training program for physicians who will serve as local education coordinators or directors of medical education. The objective of this program is to make local coordinators better able to cope with problems of continuing medical education on a sustaining

basis. A local coordinator or director of medical education from each of the 40 participating hospitals shall take part in six (6) man-days training.

To summarize the research component of the study, the primary objective of the impact and effect of the consultation process on continuing medical education program development and implementation, while the corollary research objective was the determination of factors within the hospitals and consultation process which facilitate or inhibit implementation and establishment of continuing education programs for physicians.

Phase II Scope of Work in relation to Phase I can be found in Appendix B.

STUDY DESIGN

Phase II project design was to continue implementation of Phase I's original design (pp. 8-10)with the exception of some modifications and supplements.

Consultation

Consultation service extended to experimental hospital was to be dichotomized into minimal and intensive, that is, half the hospitals were to receive two visits and half five visits respectively. This was done in an attempt to further the nominal either/or analysis of consultation vs. no consultation into an analysis of the extent of consultation as it relates to changes in CME program development.

Training

The most important aspect of Phase II was to be the modification, and complete reworking and improvement of previous training held for both consultant and interviewers during Phase I and the addition of a new training program for hospital physician education coordinators. Training for consultants and local education coordinators was to be translated into 6 and 5 days respectively of training for each group. Discussion of the purposes, procedures and outcomes of the training programs can be found on pp. 85-100.

Research

Pertinent to the original pre-post experimental group design (pp. 8-9), comparing quantity and nature of CME activities in experimental hospitals before and after consultation, which was not executed due to failure in collecting the necessary pre data, Phase II research design called for reenactment of the design by resoliciting both pre and post data. Local physician education coordinators would be asked to complete an education activities sheet for each year of the study - one depicting nature and extent of activities prior to consultation, one reflecting activities at the end of the first year of consultation and another summarizing activities after the second year of consultation. Analysis would consist of determining significant changes in program development activities as a result of consultation intervention.

Consultants recommendations would be followed up and analyzed as in Phase I's design but with one major variation. Instead of the original 4 month recommendation implementation period of the first year, a longer 8 month period would be allotted - a more realistic time period for hospitals to take action on recommendations. Also recommendations were to be submitted to hospitals by the middle of September which would more closely coincide with the time period in which the yearly CME program is initiated. To determine the effect of consultation on program development over an extensive period of time, Phase I recommendations would be followed up 18 months after they were submitted.

The second aspect of the original design, the control vs. experimental group design (pp. 9-10) would remain in tact. However, attempts would be made to include two additional components to the assessment of reported changes occurring at experimental and control hospitals by 1) examining the level of completion of a change, e.g., a fully operational change versus one that had only reached the planning stages; and 2) conducting a more detailed content analysis of reported changes.

The corollary research objective of uncovering factors in the hospital, the medical staff and the consultation process which may effect innovation and change in CME program development would follow the same design as Phase I (p. 11). Attributes would be reviewed for possible deletion from study as a result of the inability to obtain measurable data or the remoteness of relationship of the hypothesized variable to the dependent variables. Attributes not included in Phase I would be considered for inclusion in the study if they were felt to be a possible contributing factor and if they were measurable.

All research instruments and procedures were to be reviewed for possible refinement in an attempt to produce more reliable, valid and meaningful data. Of prime consideration would be the development of a more thorough training program for evaluation data collectors and interviewers.

Phase II study design is diagrammed on page 81.

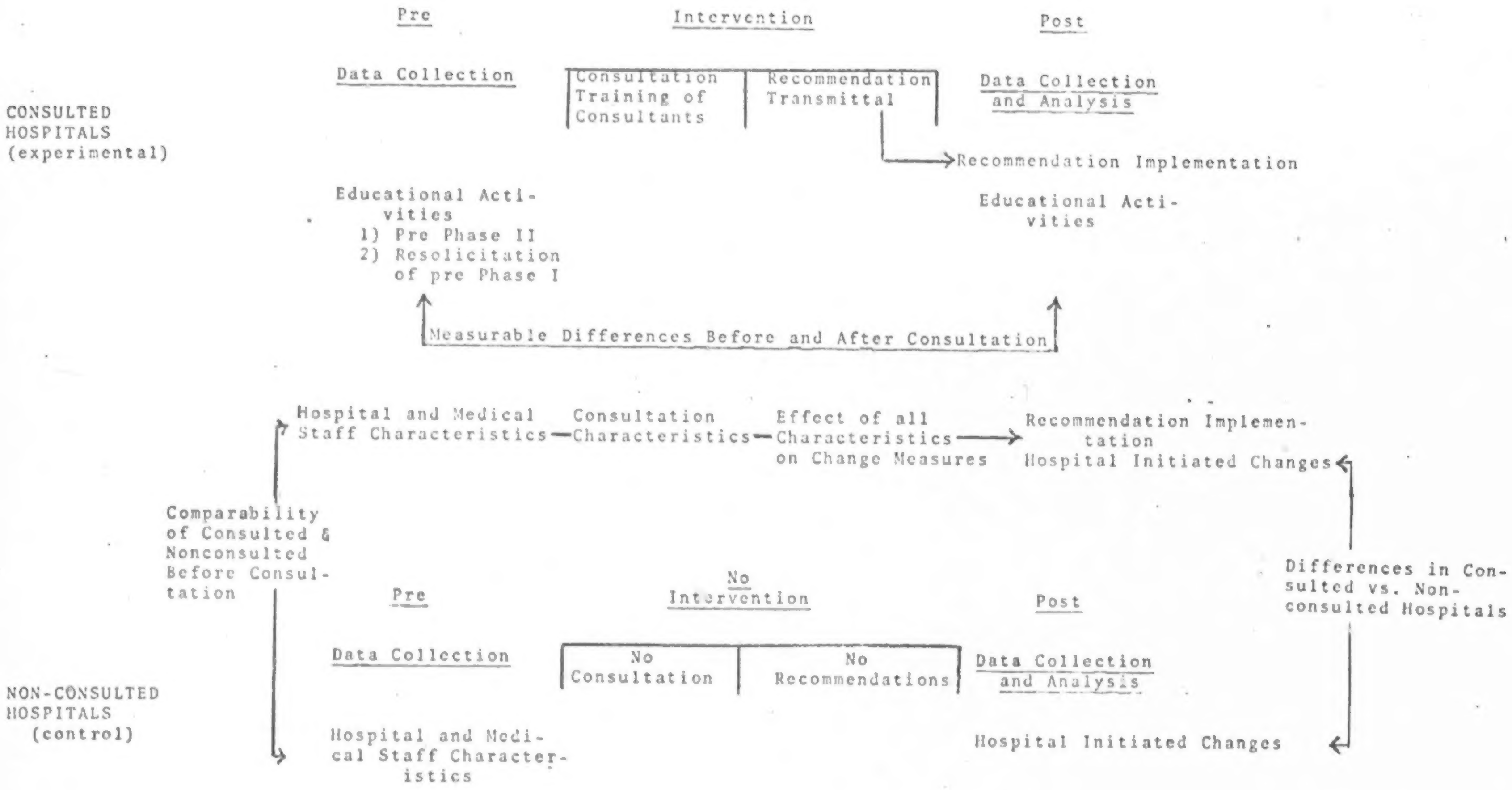
PLAN OF PROGRESS

Initial steps for implementing Phase II would consist of obtaining confirmations from participating hospitals and consultants to continue with consultation for another year, replacing hospitals not wishing to participate with new hospitals, and recruiting additional consultants to replace those who would not be able to continue with the project.

Training programs for consultants and local education coordinators would commence in May 1968 and would continue throughout the remainder of the first year in one day segments. Training would consist of both individual sessions for each of the two groups and joint sessions where content and interest overlap.

Experimental hospitals would be randomly selected into "intensive" (five visits) and "minimal" (two visits) in such a way that each consultant would have a distribution of "intensive" and "minimal" hospitals. Consultation visits would resume in May 1968 and would continue through October for "minimal" hospitals and through March 1969 for "intensive" hospitals. Consultation would reinforce and maintain worthwhile established programs, continue to stimulate program development based on assessment of hospitals' needs and interests, and continue to develop the expertise of local physician education coordinators as hospital medical educators. September 15 would be the official date for transmittal of recommendations to hospitals, followed by an eight month recommendation implementation period. During May and June 1969, hospitals would be followed up by an indepth interview to determine status of both Phase I and Phase II recommendations. Data

STUDY DESIGN - PHASE II


Pre
Intervention
Post
CONSULTED HOSPITALS (experimental)
Data Collection
Consultation Training of Consultants
Recommendation Transmittal
Data Collection and Analysis
Recommendation Implementation
Educational Activities
1) Pre Phase II
2) Resolicitation of pre Phase I
Educational Activities
Measurable Differences Before and After Consultation
Hospital and Medical Staff Characteristics
Consultation Characteristics
Effect of all Characteristics on Change Measures
Recommendation Implementation
Hospital Initiated Changes
Comparability of Consulted & Nonconsulted Before Consultation
Differences in Consulted vs. Nonconsulted Hospitals
NON-CONSULTED HOSPITALS (control)
Pre
No Intervention
Post
Data Collection
No Consultation
No Recommendations
Data Collection and Analysis
Hospital and Medical Staff Characteristics
Hospital Initiated Changes

on the nature of hospital changes occurring during Phase II would be obtained at the same interview. Other data pertinent to hospital and medical staff characteristics as well as frequency and nature of physician education activities would be collected throughout Phase II. During the second year of Phase II (June 1969 to May 1970) data would be analyzed and a report covering the activities of the three year contract would be written. (An overview of Phase II's plan of progress is charted on page 83).

PROJECT IMPLEMENTION

RECRUITMENT AND SELECTION OF HOSPITALS

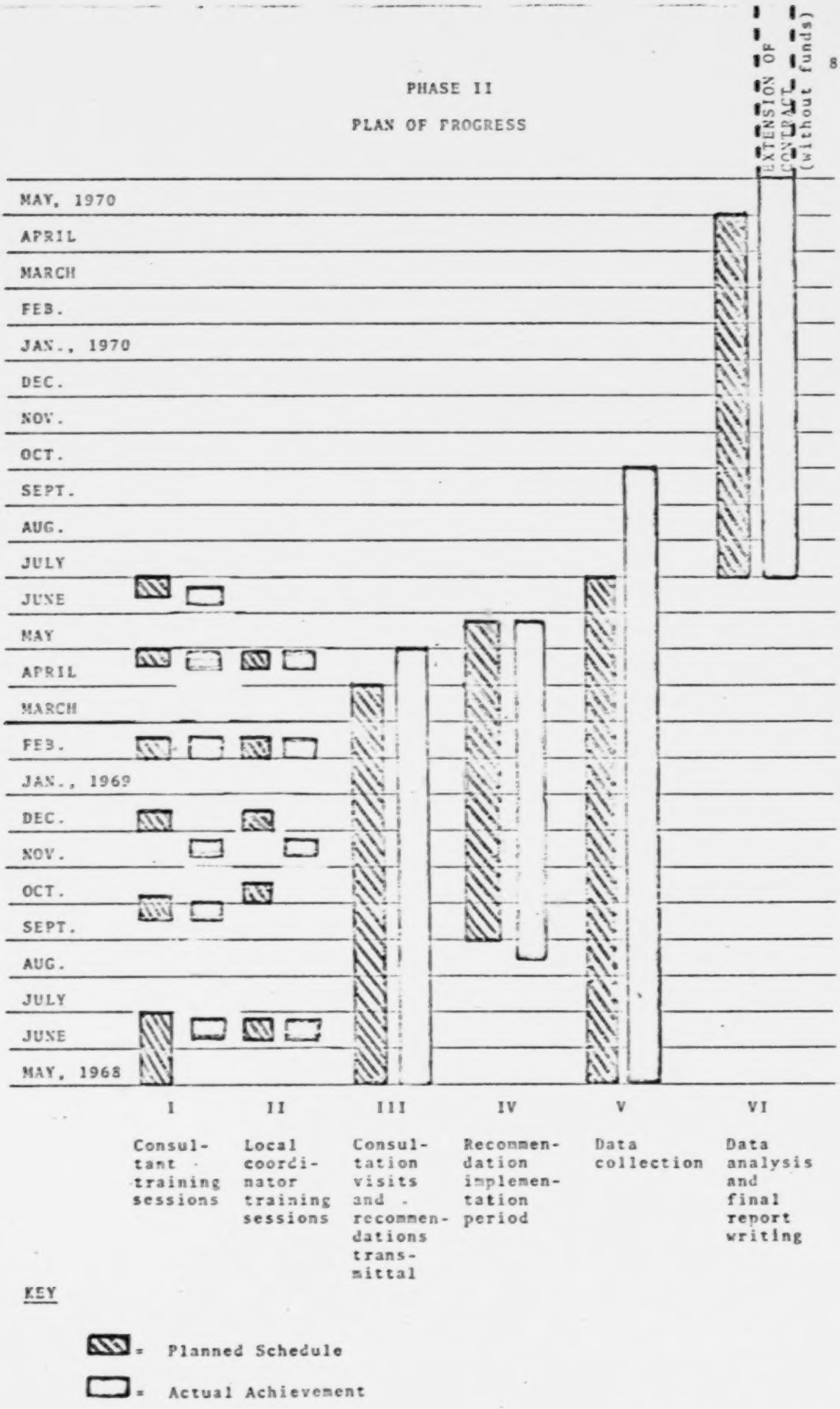
During May and June 1968 consultants visited Phase I experimental hospitals to explain the Phase II consultation program and to seek the hospitals' commitment to participate in it. Specifically, discussions during the visits focused on the following areas:

1. explanation of the program and elicitation of hospital commitment to participate in Phase II.
2. the need for a local hospital physician education coordinator (preferabl- appointed for 2 years)
3. the need for hospital commitment to financial support of its education programs.
4. the need for the hospital's cooperation and participation in research component of the study that is concomitant with consultation.
5. discussion of the data pertinent to education activities that the hospital would be expected to supply.
6. plans for a local education coordinator training program and the need to send the local coordinator or representative to the first session on June 19.

Of the 40 hospitals visited, one hospital chose not to continue in the study. Three hospitals, which had participated as controls in Phase I, were selected into the experimental group. The discussion to replace one with three hospitals was based on two factors: 1) all three hospitals when controls had urged PMI to accept them to receive consultation and 2) it was felt by the PMI staff that there were other hospitals within the

PHASE II

PLAN OF PROGRESS



experimental group who would drop out of the study before the consultation program terminated. Four hospitals were solicited to participate as controls - three to replace the controls which became experimental and one to replace the control which dropped out of the project. (A listing of Phase II experimental and control hospitals may be found in Appendix D, p. D-2. See map, p. 20.)

CONSULTANT RECRUITMENT AND HOSPITAL ASSIGNMENT

The increased number of consultation visits required by Phase II's design and the anticipated inability of several consultants to continue with the project necessitated the recruitment and training of additional consultants.

Recruitment and contracting of consultants was accomplished by holding a dinner meeting for all prospective consultants, including both the 13 who had participated during Phase I and 8 additional physicians who had expressed interest in participating as consultants. Several members of the PMI staff outlined the philosophy and objectives of PMI, design of the contract, and specifically the nature of the consultation process under study. Preliminary results of Phase I and plans for Phase II were reported to the consultants. The responsibilities of consultants vis-a-vis time commitment for training, number of required hospital visits, and the intensive nature of half of the consultation relationships as modified in Phase II were carefully outlined before consultants were asked to make personal commitments. Nine of the 13 phase I consultants and 5 of the 8 new prospective consultants agreed to participate in Phase II. (A list of Phase II consultants and their academic titles are presented in Appendix E , pp. E2a-b.

Assignment of consultants to hospitals was based on three dimensions: 1) distribution of hospitals with varying bedsize, 2) distribution of both intensive and minimal consultation hospitals, 3) geographical proximity of hospitals to each other. Care was taken not to disrupt relationships established between consultants and individual hospitals during Phase I. Consultants were assigned to their prior year hospitals where feasible. Consultants were assigned geographically proximate hospitals to permit exploitation of potential regionalization of education programs. Regionalizing education programs was felt to be a possible means for improving education programs at individual hospitals, and also for pointing up new potentials for improving patient care.

ORIENTATION & TRAINING OF CONSULTANTS, EDUCATION COORDINATORS & EVALUATION INTERVIEWERS

Based on statistical results of Phase I, the observed and stated need for greater development of consultants' expertise, plus the continued need to better standardize the experimental treatment, that is, that each hospital receive comparable consultations, it was concluded that more adequate orientation and preparation of consultants should be undertaken. This tenet evolved into a formal consultant training program for Phase II. Training was extended to include physician education coordinators from experimental hospitals. The objective of this extension was to make local coordinators better able to cope with problems of continuing medical education on a sustaining basis.

The concept of standardization of human variables via formal training was further expanded during Phase II of the contract to include a more rigorous interviewer training program.

The focal point of the present section will be the discussion of training sessions for all three groups. Consultant and physician education coordinator training will be discussed as a unit followed by a discussion of interviewer training.

Consultant and Physician Education Coordination Training*

Following principles of adult education theory, the formal training program initiated during Phase II was designed so as to include both the transmitter and receiver of learning, i.e., knowledge of principles and methodologies of educational program development. A three fold rationale for this dual training component existed:

1. Education Standpoint

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*The reader should note that terms DME, local coordinator, hospital coordinator, physician education coordinator will be used interchangeably in reference to the individual representing the hospital who assumed responsibility for the education program.

Where learning needs of each group coincided, the provision of joint sessions would be more efficient and more effective in terms of the potential for sharing a perspective on community hospital program development that each group would bring to training.

2. Research Standpoint

   In order for the consultation process to have a comparable impact on all hospitals via the education coordinators (within whom is vested primary responsibility for coordination of the education program at the hospital) similar exposure to various aspects of program development was deemed fruitful in order to avoid possible bias engendered by exposure to one consultant only.

3. Service Standpoint

   Joint training would provide opportunities for a greater continiuty in the consultant-consultee relationship and would provide consultants with opportunities to further assist their hospitals in developing a program.

Six training sessions were held during Phase II (May '68-May '69), three of which were joint meetings for both consultants and coordinators and three of which included only one of the groups (two for consultants only, one for local coordinators to which consultants were invited and in most instances attended.)

Added to Phase II training sessions was an evaluation component. Participants were asked to critique the session by completing a written evaluation instrument. The purpose of the evaluation was two fold:

1. to assess the extent to which objectives were met; and

2. to obtain information on desired content, formats and logistics of subsequent sessions. In this way both consultants and DME's were able to participate in the planning and organization of each session.

Results of evaluation will be discussed as part of the discussion of each training session.

Copies of agendums, training materials and evaluation instruments for each session may be found in Appendix F, Phase II, pp. F-4a-9c.

Training Sessions #1 - June 19, 1968 (Appendix F-4a-f)

The morning session was devoted to consultants only, while the afternoon and evening incorporated both the consultant and the local education coordinator. Trainee participants included 12 PMI medical education consultants, and 28 local coordinators representing 26 experimental hospitals.

The segment of the training devoted to the consultant dealt with a review and discussion of the consultation process and procedures for implementation. Included were the following discussions.

1. Goals of Consultation Process

Overall goals of the entire consultation process were reviewed: stimulation of staff to assume responsibility as a resource for education program; development of community hospital physician education programs based on full utilization of local resources (including manpower and facilities) and supplemented by external inputs as needed; and use of the community hospital as a major focal point for continuing medical education of physicians.

2. Manifestations of Goal Attainment

Measurable indicators of attainment of consultation goals were discussed: appointment of a local coordinator; provision for financial support of education program (administration, staff, other sources, e.g., drug companies, foundations); allocation of secretarial assistance and program publicity relations; full identification of local strengths and weaknessess; maximum use of local staff as instructors; use of outside expertise to complement and supplement local resources; and initiation of regularly scheduled education activities (e.g., grand rounds, medical audit, CPC, guest lectures, etc.)

3. Consultation Procedures

Consultants were briefed on the importance of establishing rapport with the hospital and especially the local education coordinator with whom he would be working. As an outside agent the consultant must be accepted by the hospital staff before any change may be expected. By the same token, however, consultants were cautioned to establish a non dependency relationship. An important aim of the consultation was for the hospital to function in an independent fashion after termination of the consultation process. To attain this end, the very important element of the establishment and development of a DME was again stressed. Functions of the DME were to assist and collaborate with the consultant in developing an education program during the consultation program and to continue efforts of the consultant in aiding the hospital to develop programs independently long after consultation was withdrawn.

Further discussions of the consultation procedure included the collection and use of data, the recruitment of local participation in program development, and formulation and transmission of consultant recommendations.

The afternoon session, in which both consultants and coordinators participated, included a review of PMI philosophy and consultation procedures as well as the specific objectives of the contract. An analysis of the functions of a local coordinator i.e., data collection and analysis, program production and program assessment, were discussed. Presentations by four consultants of their consultation experiences illustrated the four vital aspects of the consultation process eluded to earlier in this report i.e., establishment of rapport, data collection, recruitment of local participants, and transmittal of recommendations. The remainder of the session was devoted to group discussions and exchange of problems and experiences at individual hospitals.

In addition to the traditional educational methods of curriculum implementation such as lecture, question and answer, case history, and chalk-talk, the training utilized techniques of behavioral psychology such as sensitivity training exercises, group problem solving, and force field analysis.

Evaluation of Training Session #1

Analysis of responses from both consultants and DME's to the questionnaire instrument pertinent to the June 19 session yielded the following findings. A majority of the consultants identified the DME's presence as the most useful part of the training session. Responses were of the following nature: "afternoon session with DME's participating", "contracts with DME's", "chance to see degree of acceptance by DME", "finding out what the DME felt about PMI", etc. Ranking second in the most useful category were "the sharing of ideas and thoughts, and general contact with other consultants." As to the least useful segment of the training session, consultants seemed to be in agreement that the morning session was the "least useful" part of the day. Responses were levelled at various areas: "excessive introduction", "repetition", "too much discussion that was not pertinent", etc., all of which were directed at the morning session consisting of the consultants only.

Suggestions as to how the sessions might have been changed to be more effective were numerous, yet all of them seemed to deal with a time factor, e.g., "set fewer topics to cover", "have fewer topics with more discussion", "less introduction - more time on crucial problems", "divide the morning session into small groups".

Regarding suggestions as to agenda for future training sessions, consultants voiced a need for the following areas:

Methods of evaluation

Resources available to consultants for hospital programs

Educational Techniques

Specific information on regional resources, e.g., RMP, medical schools, etc.

Of paramount importance, however, was the voicing by consultants of a need to conduct and moderate their own consultant session. In response to this need, the September 28 session, which will be discussed subsequently, was given over to the consultants.

Regarding the DME's evaluations of the first training session, responses yielded the following. Consensus as to the most useful part of the session was the learning and sharing of other community hospitals' problems. The least useful segment of the session was the introductory philosophy. Criticisms were of the nature that it was either too long or too repetitive.

Very few DME's had suggestions as to how they would have changed the session if they were in charge of it. The few opinions voiced were directed at requests for more case studies and more group work.

Suggestions by local coordinators for future sessions encompassed all aspects of program development. The more frequent suggestions included: techniques for stimulating medical staffs to attend and participate in CME programs, methods for determining needs and program goals, and sharing problems and ideas with other local coordinators.

PMI fashioned subsequent training sessions in response to all of the above findings. Special attention was paid to felt needs of the participants. The reader will note that in response to requests for evaluation, an entire training session, that of February 1, 1969, was devoted to evaluation of the education program.

Training Session #2-September 28, 1968 (Appendix F-5a-b)

Training session #2, for consultants only, was held on September 28, 1968. Eleven of the PMI medical education consultants met with the Institute's staff and several resource consultants. As indicated, in response to the consultants' voiced need for moderating their own session, most of the day's planning and discussions were turned over to a consultant moderator. Rather than a didactic type of lecture session, the meeting evolved into a discussion and clarification and exchanges of feelings between PMI staff and the consultants.

The essence of the entire session was devoted to various aspects and problems of the consultant's role. The relationship between the consultant and PMI, and between the consultant and his hospital were explicitly reviewed. Consultants' ambiguities regarding PMI's expectations and hospital commitments were clarified. Consultants expressed a need for knowledge as to what Postgraduate Medical Institute can provide in the way of service to individual hospitals. Areas in which they were especially interested included: nursing education, library development, audio-visual educational devices, etc. A further focal point of the discussion was the DME and what both the consultants and PMI might provide in the way of guidance to him.

In conclusion, consultants expressed a strong desire for another meeting within two or three months, at which they could learn more about various educational resource areas, especially audio-visual presentational materials. In this way they felt they would be better able to offer more effective educational program consultation.

Evaluation of Training Session #2

As to the perceived usefulness of the September training session by consultants, 78% rated it useful or very useful. A good majority of the consultants voted the most useful part to be its clarification properties: clarification of the role of the consultant, clarification of expectations (what PMI expected from the consultant), etc. Other reported attributes contributing to the "usefulness" of the sessions included "free wheel session without structured or biased agenda", "less generalization than last meeting", "improved communication between PMI and consultants."

In regard to the least useful part of the training session, consultants voiced concern for more details, more specifics. One consultant perceived that discussions of audio-visual equipment was the least useful part only because there was lack of sufficient detail, specific information on the what's, how's, where's, etc.

When asked of the focal areas preferred for future sessions, consultants responded with the desire for a sharing of other consultants' experiences, evaluation of impact on patient care, the use of auxillary resources, role of RMP and available training for DME's.

Training Session #3 - November 16, 1968 (Appendix F-6a-e)

The session consisted of three components: a morning session for consultants only, a joint afternoon session for both consultants and local coordinators and an evening session for local coordinators only. Nine consultants and 20 education coordinators participated.

The morning segment dealt with the consultant's relationship to his hospitals in terms of the experiences he had gathered, the problems he had encountered, and the insights he might have acquired.

The format of the morning session was an open ended discussion. Consultants were given the opportunity to express their feelings about their role as consultants. Several consultants expressed concern about their effectiveness at the community hospital level. This concern manifested itself in several areas, such as, were the consultants fully accepted by local hospitals, were they communicating effectively with the hospitals, etc. Consultants supported each other in their answers and solutions to the problems they had presented.

There was a significant response when the moderator of this session asked the questions, "Having been a PMI consultant for six months, what have you learned, what do you know now that would benefit your future consultations, how can a consultant increase his competence and effectiveness?" One consultant responded with a proposal for live-in arrangements to be made for consultants so that they could become even more closely involved with the hospital. It was concluded that this would be a more appropriate role for the DME, but that the DME and the consultant should work closely with one another.

The afternoon sssion, which included both consultants and local coordinators in a joint training session, consisted of brief formal lecture inputs followed by problem-centered workshops. The session was based on needs of the trainees as expressed by the trainees themselves in previous training sessions. In response to one of these expressed needs for knowledge regarding resources, facilities and services available to the physician, PMI presented a range of topics, including:

1. PMI-NERMLS* Core Library Development Program, and services available.

2. The Use of Audio-Visual Materials in Continuing Education Programs.

   Trainees were shown a film about appropriate and inappropriate uses of audio-visual techniques.

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*Postgraduate Medical Institute-New England Regional Medical Library Services.

3. Principles of Adult Education for the Physician Learner.

A brief overview of educational principles in adult education was presented, (see Appendix F-6c-d for materials distributed), followed by presentations of a few case studies dealing with successful ongoing hospital-based continuing education programs which incorporated adult education techniques into planning and implementation.

Following this brief conceptual input, the group was divided into three smaller workshop groups, each with a "resource person" as moderator, and each group meeting as a unit in separate places. The purpose of the workshops was to work through the application to the community hospital of educational resources and adult education principles discussed in prior presentations.

After the allotted interval of 45 minutes, workshops were regrouped in order to provide trainees with further contacts with additional consultants and DME's. A "resource person" was available within each group to offer direction and guidance when requested and to clarify questions and ambiguities when needed.

Upon completion of the workshop experience, the groups reconvened as an entire unit in order to review and share learning experiences.

Finally, a wind down of the afternoon session consisted of an evaluation of the day, and a discussion of items for future training sessions. A consensus of opinion was reached to include the "evaluation of education programs" as a topic for a future training session.

The present training session also included an evening session, which was devoted exclusively to the local coordinator, and which paralleled the consultant's morning session. Discussions, which concentrated on the role of the local coordinator, invited trainees to share with each other their significant experiences, problems, and insights to date.

Evaluation of Training Session #3

As with all preceding training sessions, participants were asked to evaluate the day's experiences along various process and content dimensions. In the past the research staff had used such evaluations primarily as sources of learnings which might guide the planning of future training. To this ongoing process a second dimension was added which, it was anticipated would provide some measure of the impact of the training on actual behavior change, that is, some indication of the training program's effectiveness beyond the anecdotal and testimonial evidence already accumulated. To this end, each trainee, consultant and coordinator, was requested to specify one instance of a new learning arising out of the day's training which he thought he would attempt to apply in his capacity as consultant or local coordinator. Plans called for recording and cataloging the statements and for a review of the status of the indicated learnings with the author of the statements several months later to determine the actual amount of transfer and application to work situations of learnings claimed at the time of training.* It was hoped that this procedure would provide evidence to enhance the persuasiveness of the already accumulated anecdotal and testimonial evidence supporting the effectiveness of the training program.

Evaluation by the consultants of the morning sessions indicated that the "unstructured nature of the conduct of the conference" was most useful as a learning format. Consultants felt that the most useful parts of the sessions were the discussions on potential constructions of CME programs and on the possibility of a local coordinator accompanying a consultant on a visit to another community hospital. The most frequent response to the question of desired areas for focus in future training sessions was information regarding resources available to community hospitals. Other responses included "mechanisms for maintaining the programs at the hospitals" and "evaluation of the various approaches to continuing education." Common consensus as to the "least useful part of the morning session" was levelled at its repetitive qualities. Responses such as "rehashing of materials that had been gone over at previous meetings", "reiteration during last hour", "excess talk", etc., were elicited. Consultants had difficulty in expressing specific personal learning experiences that would be applicable in their role as consultants. Responses included: "lack of awareness of fact that leadership can be programmed", "only new suggestion-possibility of another DME accompanying consultant to hospital ", "profitable in bringing group together. (Can't single out specific points)", "no explicit learning event for directed use ", "question to be raised in future with DME at local level-what he would consider to be most useful type of consultant ", "need for personal study in educational principles and attempt at application ", and "increased sensitivity for limitations of capacity of community hospital to involve attending staff in self-education."

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*Time and resource limitations of later phases of the contract precluded the follow up segment of this evaluation to determine whether reported learnings were ever actually applied.

However, consultants were more specific in their statements of potentially applicable learning they acquired from the afternoon session. Responses were: "idea of exchanging review committees in evaluating and auditing, i.e., URC,", "discussion of facilities and services of Countway Library enlightening.", "sitting beside my DME counterpart and noting which points he thought of value. (Points he took notes on)", " tentative set of principles provided by Ezra ", and "to insist on patient presentation at hospitals."

Learning experiences of local coordinators were stated in more general terms. The most frequently expressed learnings pertained to the use of multiple physicians representing various disciplines in presentation of cases, the concept of the Core library and resources available through Countway Library of Medicine.

Results of the discussion held at the end of the afternoon session and of the analysis of responses from the questionnaire as to desired future training topics. indicated that a subsequent training session should be concerned with evaluation of education programs.

Training Session #4 - February 1, 1969 (Appendix F-7a-b)

On February 1, 1969, a day-long training session for both medical consultants and local hospital coordinators was held at a conveniently located motel in the outskirts of Boston. The training session was a fourth in a series for consultants and a third in a series for local coordinators. Eleven consultants, 23 local coordinators, 5 guest participants and 10 members of the Postgraduate Medical Institute Staff attended.

In response to consultant requests at previous training sessions for specific content items in future sessions, the day's program encompassed various dimensions of the evaluation of medical education. No attempt was made to present a tight, pre-packaged, do-it-yourself evaluation technique. Rather, a variety of different approaches were demonstrated and hand-out materials pointed to the still broader realm of possibilities open to a prospective evaluator of medical education.

Faculty for the session included: Thomas Durant, M.D., Massachusetts General Hospital; Clement Brown, M.D. and Daniel Fleisher, M.D., Chestnut Hill Hospital, Philadelphia; and Ezra V. Saul, Ph.D., PMI Consulting Director of Research.

Content for the session covered principles of education evaluation, medical audit techniques, program design through need establishment, resources for evaluation, and local evaluation issues. Faculty members utilized various educational methodologies including: small-group process, lantern slide-assisted lecture, and round table discussions.

Evaluation of Training Session #4

The February training session, like all others to date, ended on a note of its own evaluation. The consultants were somewhat polarized as to their reactions to the usefulness of the training session. On a 5-point rating scale indicating degrees of usefulness of the session, 4 of the 11 consultants rated it 1 or 2 (least useful) and 6 rated it 4 or 5 (most useful).

Greatest criticism was directed, not so much at the content of the program, but at the format by which the content was presented. The consultants resisted a technique to elicit active participation, a method they called "playing games." They saw this as a "waste of time" and "far below a physician's level of sophistication, interest and competency."

Local coordinators, on the other hand, had a more positive response to the training session. Only one of the 19 local coordinator attendees rated the session 1 or 2 (least useful) and 13 rated the session 4 or 5 (most useful). Of interesting note was the local coordinators responses to the most useful and least useful segments of the program. Dr. Brown's presentation on the building of an education based on identified need received both high and low ratings. The information, especially methods of data collection and staff involvement in setting standards and evaluation, proved to be more useful. However, the initial format of presentation was considered to be "wasted time," "too much semantics," "tedious buildup" "games."

As stated in a previous report, such evaluations are conducted to the end of improving future sessions. One such improvement derived from the February 1 session evaluation was a decision to directly involve trainees in the design of future training programs. This decision was implemented through the formation of a planning committee composed of four medical consultants, two local coordinators, PMI's assistant director of research and PMI's field director.

Training Session #5 - April 26, 1969 (Appendix F-8a-c)

The planning committee met several times and a plan emerged to hold an April 26 session focused on resources for continuing medical education. Although the program was designed for local coordinators, consultants were invited and 9 of them attended.

A majority of the morning segment of the program was devoted to explications of institutional resources available for continuing medical education in the New England area. Speakers representing New England medical schools included: Thomas Dawber, M.D., Associate Professor of Medicine, Boston University Medical Center; Herbert Constantine, M.D., Associate Professor of Medical Sciences, Brown University Division of Medical Sciences; Dean Seibert, M.D. Assistant Dean for Regional Affairs, Dartmouth College; and Daniel Federman, M.D., Assistant Dean for Continuing Education, Harvard Medical School.

Regional Medical Program representatives included: Richard Chamberlin, M.D., Maine Regional Medical Program; and Leona Baumgartner, M.D., Executive Director, Tri-State Regional Medical Programs.

The morning session was rounded out by Kenneth Teich, M.D. of the Professional Activities Study who discussed "Uses of PAS-MAP to Document Educational Needs." After lunch, in a session moderated by Robert P. McCombs, M.D., President of PMI, John Bjorn, M.D., demonstrated and discussed "The Problem Oriented Medical Record as a Basis for Physician Education." The day's program ended with brief presentations and discussions of "real-life" hospital educational activities and techniques by several hospital coordinators.

Mr. Norman Tucker of the Division of Physician Manpower, N.I.H., attended the day's program. His involvement included not only participating in the education sessions but also meeting with PMI consultants, local coordinators and staff for helpful discussions of problems relevant to the study.

Applying insight gained from past evaluations regarding the effective attention span of training sessions participants, the meeting was adjourned at 4:00 p.m.

Evaluation of Training Session #5

Reactions to the April 26 training session were, for the most part, favorable. On a rating scale of 1 (least useful) to 5 (most useful), all 9 consultants and 12 of the 13 coordinators rated the session 3-5. Of prime interest to the group were the presentations by the various medical schools describing their education programs and available resources, as well as the description of the application of the problem-oriented record.

The presentation on the use of PAS-MAP to determine education need met with less enthusiasm. Of particular note however was the frequent response by participants that there was not one session that wasn't useful. Suggestions for future training topics varied. Included were: item and resident exchange with community hospitals; more locally successful method of audit and/or education; how to increase attendance and participation of the medical staff in post-graduate education at community hospitals; new ideas for formats of conferences-new subjects, new ways to present ideas, how to organize, etc.; how to implement regional medical planning between hospitals in the same community.- esp. in areas of continuing medical education; panel of DME's who have university affiliation-to see how they view the role of the university in light of their own needs; staff self-analysis-can a hospital staff function as a group?; and specifics of developing program objectives.

Training Session #6 - June 10, 1969 (Appendix F-9a-c)

On June 10, 1969, 12 consultants met for a dinner meeting to coordinate strategy for termination of consultation. Discussion centered on final hospital visits, continuance of the consultation programs, and recommendations for improving the consultation process.

Consultants exhibited a polarity of opinions regarding the competency and capability of physicians as education consultants, the preparation of consultants and hospitals for consultation and the appropriateness of the current consultation model. Many of the consultants expressed feelings of discomfort in their role as educators, especially when the education process became more in depth at the hospitals such as during the second year of consultation. Some consultants felt that PMI's training program had helped them to be effective as educators and that the program ought to be continued. A question was raised as to the efficiency of consultation in terms of the one to one interaction of consultant and his hospital especially in the context of a larger than 40 hospitals setting. The bringing together of DME's and providing training for them could be just as effective, if not more so, than the provision of consultation. Another consultant felt that meeting with just one or two members of the hospital staff on a visit was not enough. Built into the consultation should be an effort for the consultants to meet periodically with other staff members, as well as a periodic review of the consultation and program goals at a full staff meeting. Other suggestions were that possibly consultants should interchange hospitals, that perhaps there could be a team of consultants working with one hospital, and that local coordinators or residents could be trained to provide consultation. Initially there should be field training under the supervision of the consultants. Another suggestion for improving the consultation process was the development of a mechanism for debriefing the consultant after his visit. This could be translated into somekind of a questionnaire which he could complete following his visit. Purpose of the form would be to enable the consultant to efficiently document his activities to help him review and recall all aspects of his visits, and to help him organize his next consultation steps.

Consultants varied in their opinions as to whether the hospitals had made a strong enough commitment to the consultation program. One opinion expressed was that the hospitals should be required to make some kind of financial commitment. On the other hand, one consultant felt that the local coordinator, by taking time off to attend training, was exhibiting a strong commitment. Another consultant suggested that commitment might be for the hospital to expose its records for program need assessment. A question was raised as to what one does with a hospital who isn't willing to comply with commitments. It was felt that consultation should still be given, but that the hospital should be informed that it falls below the commitment criteria. Other consultants felt without a commitment to meet the requirements for receiving consultation, consultation would be ineffective and a waste of time. There was general agreement that hospitals should be properly prepar-d for consultation, that the entire staff should be made aware of the program, that the local coordinator should lay the proper groundwork and that the board of trustees should consent to the program.

Consultants received a suggested procedural guide for conducting their final visit including suggested areas of discussion. (Appendix F-9b-c)

Interviewer Selection and Training

One outcome of Phase I was a finding of interviewer bias related to the mean number of reported hospital changes. (See Phase I, page 69). Although this problem did not invalidate the data, it was decided that further standardization of interviewer data collection techniques was necessary. An intensive training program was developed for the purpose of reducing future contamination.

Criteria for interviewer selection were established and included: participation in the contract's first year interviewing; doctoral candidates in the behavioral sciences; professional training in interviewing and observation, preferably with some experience in the field of hospital operations; and, the availability to participate in the complete research and training program. Seven interviewers were selected from two metropolitan Boston universities and one teaching hospital.

The initial training session for interviewers took place in conjunction with the April 26 training session for local coordinators.* Participants included: PMI research staff; several Phase I interviewers; and seven new Phase II interviewers. The objectives of training were to equip the interviewer to effectively gather information and relay hospital requests or questions to PMI.

Training began with each interviewer receiving a sample interview packet and a presentation of PMI's evolution and current activities. An historical and theoretical synopsis of the Public Health Service Project including an explanation of the research design followed. Using the design as the reference, the participants discussed the practical considerations of specific interviewing situations and problems. Issues discussed included the handling of: 1) interviewee defensiveness; 2) requests for group interviews; 3) hostility toward the Institute; and 4) interrupted or abbreviated interviews.

The final consideration of the training session was a review of the materials in the sample packets. Included within these packets were interview arrangement and confirmation sheets, and interview guides, the standardized questions used for evaluating change and copies of recommendation forms where applicable. The guide and recommendation forms procedures were reviewed in detail so as to increase interviewer proficiency and reliability. Interviewers were requested to obtain missing information such as the Hospital Attributes sheets, and 1968-1969 Educational Activity Schedules or to make arrangements for their delivery to PMI. It was suggested that hospital questions be written on the outside of the interview folders to facilitate immediate replies by the Institute. The program concluded with a review of administrative expense procedures.

Part II of the interviewer training was observation-supervision of an actual interview. Each interviewer visited a hospital with an experienced interviewer from Phase I. The interviewer trainee observed the experienced interviewer conducting two or three interviews. Roles were then reversed and the trainee administered an interview. Upon completion of the day's interviewing and data collection the trainee and his supervisor discussed their experiences and analyzed and clarified interview procedure and technique.

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*See Appendix F-10a-r for a copy of the training agenda and sample interview packet.

The new interviewers then visited an assigned hospital on their own. After all interviewers completed supervised and solo interviews, they met as a group with the research staff to discuss difficulties encountered and to suggest better methods of data collection.

The staff found that the basic interview guide needed revision. Deleted from it was the section questioning the cause of specific changes. It was felt that the interviewers were far exceeding the time limit established for the interviews, and that the answers recorded for this section were subjective to the point of being unreliable.

In order to reduce interviewer bias in hospital assignment, each interviewer was assigned to an approximately equal number of experimental and control hospitals. Temporal and monetary economics of this task were considered so that each interviewer usually visited more than one hospital in a geographic region.

As a result of interviewer training and subsequent research staff evaluation, one interviewer was dropped and his hospitals were redistributed.

CONSULTATION IMPLEMENTATION *

Phase II's Scope of Work called for implementation of two levels of consultation: "intensive" and "minimal". Of the experimental hospitals, half were to receive "intensive consultation" (five site visits) and half "minimal consultation" (two site visits), "minimal" being comparable to the amount of consultation allocated for hospitals during Phase I.

Consultants were scheduled to initially visit each of their hospitals during May-June 1968. These initial Phase II visits were to be utilized to reestablish contracts and commitments to the second phase of the contract and, hence, to assure more effective functioning of all phases of activity. Specifically each consultant was requested to use the visit to cover at least the following points requisite to the onset of actual consultation visits later in the summer.

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*Case studies of two experimental hospitals are presented in Appendix I, describing the hospital and the status of its education program at the onset of consultation, the development of consultation over the two year study period (Phase I and Phase II), the nature of the consultant's recommendations and the outcomes of consultation.

1. Obtain the name, address, phone number, title (position) of local physician education coordinator.

2. Complete staff education questionnaires (See Appendix G-8a).

3. Complete educational activities form (See Appendix G-2).

4. Orient local coordinator and hospital administrator to our expectations for the coming year in at least the following areas:

    a. Coordinator training

    b. Coordinator and adminstrator

    c. Local resources identification

5. Ascertain what time schedule for consultation visits will make maximal impact on educational program development considering:

    a. When hospital prepares its annual budget so that support can be included.

    b. When key staff members will be available for program planning.

    c. Optional starting date for program.

Inclusion of items four and five was specified so as to avert repetition of two Phase I problem areas. Since the staff was cognizant of the problems that may arise when the full extent of participation requirements for training, administrative duties, etc. are not spelled out, underscored and reiterated, consultants were asked to be sure that all local coordinators and administrators were fully aware of all implications of their commitments under item four above. In the case of item five the staff was seeking to avoid, where possible, hospital visits and subsequent generation and transmission of recommendations at a time which might unduly prejudice chances of their successful implementation during the test period.

Purposes of subsequent visits included stimulation of new program development, reinforcement and maintenance of established programs, and encouragement and development of hospital sophistication in program evaluation.

Consultants were requested to make final visits to their hospitals during the summer of 1969, prior to the onset of the fall education program. Consultants were to use such final visits to evaluate the quality of the present educational activities and to assist the hospital's development of an education program for the coming year. Hospitals were to be encouraged to state their 1969-1970 educational goals, objectives, and plans. In order to make the final visit more meaningful, each consultant was equipped with reports of his hospital's implemented recommendations, changes, and other available information. (See Appendix pp. F-9b-c, Procedure for Final Visit.)

Upon conclusion of his visits, each consultant was to prepare final reports for transmission to his hospitals summarizing the hospital's progress during the course of consultation and noting any final recommendations for program improvement.

Fifteen consultants made 72 visits to 40 experimental hospitals under Phase II of the contract. (The comparative figures for Phase I reveal that 13 consultants made 65 visits to 40 experimental hospitals.) Twenty "intensive" hospitals received an average of 1.8 visits, the range being 0 to 4. Twenty-two "minimal" hospitals received an average of 1.6 visits, the range being 0 to 4. Table 13 illustrates the comparison of Phase I and Phase II hospital consultation visits. It must be noted that some consultants exhibited resistance to making final visits, claiming overcommitment of time. Other consultants felt that final visits were not warranted because of lack of hospital contact over an extended period of time disrupted continuity. Fifteen of 41 hospitals received final visits.

A prime objective of consultation activities was the generation of recommendations to hospitals pertinent to the development of continuing education programs. To that end consultants were supplied with a Guide Sheet for Preparation of Hospital Recommendations. (See Appendix F-2b.) The guide was designed to provide consultants with a framework of basic considerations and potential

Table 13

COMPARISON OF PHASE I AND PHASE II HOSPITAL CONSULTATION VISITS

	PHASE I	PHASE II		
	TOTAL	TOTAL	INTENSIVE	MINIMAL
EXPERIMENTAL HOSPITALS	40	42	20	22
EXPERIMENTAL HOSPITALS RECEIVING CONSULTATION	40	40	19	21
CONSULTATION VISITS	65	72	36	36
VISITS/HOSPITAL: MEAN	1.625	1.715	1.800	1.636
VISITS/HOSPITAL: RANGE	1-3	0-4	0-4	0-4
CONSULTANTS UTILIZED	13	15	15	14
EXPERIMENTAL HOSPITALS/CONSULTANT: MEAN	3.077	2.80	1.333	1.571
EXPERIMENTAL HOSPITALS/CONSULTANT: RANGE	1-4	2-3	1-2	0-2

classes of recommendations, while restricting neither the nature nor the extent of consultants' recommendations. Thirty-five of the 42 hospitals received a total of 295 writen recommendations and 86 oral recommendations.* Of the 6 hospitals receiving neither written nor oral recommendations, 2 did not have consultation visits. One hospital withdrew from the study after the intial consultant visit, but before recommendations were generated. Table 14 comprises a comparison of the frequency of Phase I and Phase II recommendations.

Essential problems, and their antecedent conditions, continued during Phase II. Some consultants were still not able to commit sufficient time at desired intervals to meet specifications of the study. As in Phase I, the results were frequent instances of delay or postponement of meetings with members of the experimental hospitals, restriction of the duration of consultations, approximately seventy-five per cent participation in training programs, and finally tremendous variation in the time required by consultants to complete field reports, submit recommendations and then review them with the PMI staff. Only 8 of the hospitals received recommendations by the September deadline.

In two instances consultants found themselves so overcommitted that they required assistance in fulfilling their assigned consultations. This, of course necessitated the recruitment and training of additional consultants, thus causing further delay.

Of particular note with regard to Table 13 is the row entitled "Visits per Hospital: Mean" which points to one consequence of the problem. Because consultants were not able to make the specified number of visits to hospitals, "intensive" hospitals received approximately the same degree of consultation as the "minimal" hospitals, that is, the designed difference between the two experimental groups disappeared during the actual implementation of consultation. It should be noted here that mid-way through the consultation period,

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*Existence of oral recommendations were verified through perusal of consultant visit reports and personal "debriefing" interviews with each consultant.

Table 14

COMPARISON OF FREQUENCY OF PHASE I AND PHASE II RECOMMENDATIONS

		1st Year	2nd Year
EXP. HOSPITALS		40	41
HOSPITALS RECEIVING RECS.		37	35
RECOMMENDATIONS TRANSMITTED	total	443	381
	written	353	295
	oral	90	86
TOTAL NUMBER RECS./HOSPITAL	mean	11.97	10.89
	S.D.	4.21	.65
	range	1-23	1-20
EDUCATIONAL RECS.		388(88%)	352(92%)

consultants were freed of "minimal" and "intensive" restrictions and told to make as many visits as feasible. This was done to speed up the generation of recommendations and to maximize the number of hospitals receiving visits.

DATA COLLECTION AND RESEARCH INSTRUMENTS

As discussed under Phase I of the present report, two categories of data were collected: data for purposes of program development and data for purposes of evaluation of the impact of consultation. Phase II data collection embodied an entire review and reworking, when necessary, of Phase I instruments and procedures.

Data Collection for Purposes of Program Development

Instruments utilized for program development purposes remained the same during Phase II. (See pp. 28 -31 for descriptions of the instruments.) As a result of the first year's experience, it was decided that these instruments would not serve the dual function of obtaining information which could be used for program development and evaluation. Although consultants were encouraged to continue to collect data via these instruments to assist them in determining program needs and formulating recommendations, they were relieved of any responsibility for collecting information for evaluation purposes.

Data Collection for Purposes of Evaluation

Although types of data collected during Phase II were essentially the same as that of Phase I, methods and instruments for collecting data were modified when deemed appropriate.

Dependent Variables

"Change" measures constituted the major dependent variable and were defined as follows:

1. Hospital initiated changes having occurred within both experimental and control hospitals during and after completion of consultation program.

   The instrument used to collect data was the Interview Guide Sheet utilized for Phase I data collection, but in a revised form for purposes of Phase II. (Appendix H-6-9).

   The new form permitted classification of changes along a four point implementation scale ranging from "fully implemented" to "just talk." Thus, analysis of change at experimental versus control hospitals would be more precise in Phase II than in Phase I. Alterations also occurred in the categories of inquiry included on the schedule. Changes included new categories, restructuring of existing categories, and omission of unproductive ones:

   a. Hospital budget category now reflected changes in categories of expenditure as well as dollar amounts.

   b. Patient care category now omitted in favor of more specific breakdowns in categories such as hospital facilities and services, equipment, and personnel. In the latter two cases the guide permitted differentiation of expansion and routine replacements.

   c. Medical staff attitude change section now focused on actual changes in behavior in an attempt to obtain more rigorous data than in Phase I.

   d. Community change section was limited to hospital initiated changes for reasons similar to number c. above.

   e. Consulted hospital interview schedule now contained an added item to elicit the respondent's salient impressions of PMI's impact on his hospital.

2. Degree and rate of implementation by experimental hospitals of the recommendations transmitted by consultants.

   The reader will recall that a separate set of recommendations were transmitted by the consultant to the hospital during Phase II of the project.

   Interviewers followed the same format as that of Phase I, i.e., a recommendation review form (discussed on page 38) was utilized to determine degree of implementation of recommendations.

   However, in addition to determining rate of implementation for Phase II, recommendations data was also gathered pertinent to the present status of Phase I recommendations. This was undertaken in an attempt to learn more about the state of these initially transmitted recommendations after 18 months (long term effect). Data enabled the research staff to examine the kind and frequency of recommendations maintained over an extended period of time, those continuallv rejected. those on which "delayed"actions were taken, and those which, although implemented initially, underwent attrition.

As in Phase I, in-person interviews were employed for collection of hospital change and recommendation data. Selection and training of interviewers, however, was further standardized and improved in order to obtain more accurate, reliable and valid findings. (See Interviewer Selection & Training, pp. 100-102.)

Sets of in-person interviews were scheduled and conducted between May 15 and June 20, 1969, at each of the eighty consulted and non-consulted hospitals to collect dependent variable data. Requests for the interviews were made via personal letter to the hospital administrator approximately one month in advance of the desired date. PMI followed up the letter with a telephone call to confirm the interview appointment. Individual interviewers reconfirmed their appointments several days before their interviews.

Both consulted and non-consulted hospitals (though not contacted by PMI during the preceeding months) provided excellent cooperation except in a few cases.*

At both consulted and non-consulted hospitals PMI requested individual interviews with the hospital administrator, the president of the medical staff, the director of medical education or his surrogate and the director of nursing. In most cases all four interviews were obtained in one visit though vacations and broken appointments necessitated some return trips.

3. Comparison of frequency and scope of education activities during 1966-67 (pre consultation), 1967-68 and 1968-69 (post consultation).

   In an attempt to obtain measures of educational activities pre and post consultation, of which efforts to collect pre measures at the onset of consultation via the consultants failed, an Education Activity Schedule was developed to be completed by the hospital, in particular the education coordinator, for each of the three years in question. (See Appendix H , p. H-11.)

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*In most cases resistance to research efforts was limited to selected individuals within a hospital and seemed to be idiosyncratic in causation. Thus, in one experimental hospital the DME refused to be interviewed, and in another institution both the president of the staff and the DME declined. Failure of the consultation to meet the DME's expectations seems to be the cause in the former case, while the latter's cause may be attributed to overall medical staff resistance originally desired, and contracted for, by the administrator. In both instances of resistance cited above, as well as others less dramatically expressed, geography and local "politics" also seemed partly responsible. Comments by hospital members to our consultants and behavioral science staff indicated that the institutions in question, all located in the same state, seem to be increasingly oriented toward the growing medical school located in that state (at the expense of out-of-state involvement).

Data from the yearly schedules were to undergo comparative analysis to provide evidence of changes in both frequency and scope of education activities. Limitations in the method were that the data obtained for the first two years was of a recall nature, thus lessening validity, and second, the person who was in charge of the education programs for each year was not necessarily the one completing the schedule. Consequently the responder was dependent on records of programs which may or may not be thorough and complete. To aid him in collecting the information, PMI research staff filled in available information pertinent to the hospital's education activities which had been provided by the consultants during Phase I. Responders were then asked to confirm the accuracy of the information and provide missing information. Upon review of completed forms, it was observed that the quantity of data reported was proportional to the amount provided by the research staff, that is, since PMI had more data on 1966-67 education activities than on the following two years, there was an unproportionately greater frequency of reported 1966-67 activities confirmed by the local coordinator. Another factor influencing the unevenness of quantity of reported data was the willingness and "stamina" of the local coordinator for filling out all three forms (one for each year). Although the three forms were not given to him at one time but were distributed to him in chronological order for completion at approximately 2 month intervals throughout the year, the task was time consuming and, was felt, his enthusiasm waned by the time form three (1968-1969) came to him for verification and completion.

Although the data was partially analyzed, it was felt that any results yielded would be due more to the circumstance by which the task was accomplished and not to any real change occurring at the hospitals. Consequently, any further presenation of this aspect of the evaluation is not warranted.

Independent Variables

Phase II independent variables also followed essentially the same format in content as those of Phase I. It will be recalled that independent variables were of a dual nature:

1. Manipulated - (or treatment) variable-that of consultation
2. Fixed - (or classification) variables including hospital characteristics, medical staff characteristics, consultant characteristics, interviewer-interviewee characteristics.

Alterations and modifications of consultation were discussed in a preceding section (see pp. 102-108.) Regarding "fixed" variables, Phase II of the project saw deletion of the interviewer characteristics and several additions to the consultant characteristics. Further, the wording and arrangement of variables were altered in several instances in order to make items clear, concise and meaningful, and subsequently maximize their probability of being answered in a valid and reliable fashion by the respondent.

It will be recalled that the Hospital Attribute Form was the primary research form utilized for the recording of independent variables during Phase I. Likewise, during Phase II the Hospital Attribute Form was utilized, however, only after having undergone revision. (See Appendix H, pp. H-5a-d).

Although format of data collection for independent variables remained essentially comparable from Phase I to Phase II, method of data collection was completely revised for Phase II. The reader will recall that for Phase I, it was the task of both the research staff to obtain the data from documented sources, and of the interviewers to verify or correct this information with the hospital personnel at the interview scene.

On the contrary, during Phase II a completely different procedure was followed. All information which was available to the research staff regarding the various characteristics was put onto the newly revised Hospital Attribute Form. "Hospital Characteristics" section of the form was then mailed to the administrator of the hospital, while the "Medical Staff Characteristics" section was mailed to the director of medical education or, in the absence of such a person, to the president of the medical staff, well before the scheduled date of the in-person interview. In the control hospitals, the entire form was sent to the administrator. A set of directions asking the individual (s) to verify and/or correct the information provided and to supply missing information was included in the mailing, as was a cover letter explaining that the form would be picked up by the interviewer. It was expected that this procedure would yield more complete and usable data than was obtained during Phase I. Additionally, the revised method of data collection would ease part of the time pressure problem reported by evaluation interviewers during Phase I.

PROCESSING OF DATA

The essence of data processing (i.e., preparing the data for analysis by transformation of raw data to quantifiable data) was discussed in Phase I of the present report. Phase II data was processed or "transformed" along similar lines but with extensive modifications, revisions, and additions. Phase I data and results were merely tentative and preliminary, while Phase II efforts, on the other hand yielded more conclusive results. Phase II data, being more abundant and of better quality necessitated more extensive data transformation.

As In Phase I, the bulk of the present section will focus on a discussion of transformation of dependent measures, since a large portion of independent measures were either already reported in transformed form, transformation in many instances was synonymous with descriptive analysis, or many independent measures were merely "categorized" to accommodate inferential analysis.

Our discussion will begin with transformation of the two types of dependent measures: 1) data collected in both experimental and control hospitals regarding hospital initiated changes procured from responses to the Interview Guide Sheet and 2) data collected in experimental hospitals only regarding implementation status of Phase I and Phase II recommendations procured from responses to Recommendation Review Form.

Hospital Change Measures Gathered Both in Experimental and Control Hospitals

The first task which beset the staff was the question of validity, that is, were all reported changes tangible and quantifiable? Definition and criteria for valid reported changes were established. Valid hospital changes were based on aggregated reports of the administrator, the director of medical education, the president of the medical staff, and the director of nursing and were defined as any reported alterations or additions to existing hospital organization or operational function, including services, personnel, and facilities occurring during the period of May 15, 1968 to May 15, 1969. Changes which complied with one of the six following characterizations were classed invalid and excluded:

1. Vague statements of behavior alteration which were not objectively measurable, e.g., "working more closely", "gained experience", "more interested".
2. Unintelligible statements which could not be understood without supposition.
3. Duplicate statements made by more than one interviewee (i.e., the duplicate was excluded).
4. Statements describing hospital responses to extra hospital initiated activities, e.g., "an RMP representative visited the hospital".
5. Statements describing the continuation of activities begun prior to May 15, 1968.
6. Statements describing perennial activities, e.g., "hospital held its annual infectious disease symposium".

Next, criteria were established to permit valid counting of reported changes. A statement of change referent to a single item received a single score independent of indicated multiples of the item, e.g., "hospital ordered 3 electric beds" received one change score. If a change was stated as a generality with no specification of its components, it received one tally, e.g., "administration enlarged education budget". However, if a change was stated as a generality with its components individually specified, then the general citation received one tally and each specification received an additional tally, e.g., "administration increased education budget, that is, they increased physician education budget 15%, and increased nurse education budget 5%, received three scores; one for the general citation, and two for the additional specifications.

To permit analysis of the implications of changes in the number of physicians on hospital staffs, all such changes were _excepted_ from the criteria requiring that multiple items not receive multiple scores, e.g., "three internists were added to the staff," received three change scores, while "three nurses were hired," received one change score. When multiple individuals within a personnel catagory were participants in an activity only one change was tallied, e.g., "four internists participated in an infectious disease training program," received one change score. When multiple categories of personnel participated in an activity, then a change was tallied for each individual category e.g., "the administrator, DME, and four nurses attended the American Hospital Association meetings," received three change scores: administrator attendance received one change: DME attendance, one change; four nurses attendance, one change.

Reported changes were then grouped into the following categories indicating specific degrees of completion and behavior changes.

1. _Category A_ delineated changes which were tentative, futuristic or under discussion ("just talk"), e.g., "we are going to look for another internist", "we may utilize telephone consultation".

2. _Category B_ delineated changes in which the hospital exhibited definite commitment, or in some way indicated that planning had occurred, but in no way action had exceeded the level of commitment or planning, e.g., "we are seeking a new cardiologist", "the hospital has decided to buy a new X-ray machine".

3. _Category C_ delineated changes which were beyond the planning stage, but not yet concluded, e.g., "a newly appointed director for in-service education is coming in the fall," "the hospital has ordered monitoring equipment".

4. _Category D_ delineated changes which were completed during the specified time period and were fully operational, e.g., "the hospital staff now reviews deaths weekly", "EEG's are now done in the hospital".

5. Behavior Changes delineated manifest signs of activity by hospital staff which were modification of the manner in which the behavioral pattern had previously existed. These were accepted as changes only if the reported observations could be assessed objectively (quantitatively), e.g., "more staff are attending the educational program" was accepted as a valid change; "the doctors are more interested in films" was not accepted as a valid change.

It will be recalled that categories of "educational" and "non-educational" constituted the major breakdown for types of change data during Phase I. Likewise, Phase II changes, were distributed into "educational" and "non-educational" categories, operationally defined the same as in Phase I. To be classified as educational, a change had to have a primary objective of affecting the education of hospital personnel, e.g., "implement grand rounds," "initiate a team approach to education programs centered on the coronary care unit," "medical staff and administration jointly appoint a DME." Any change that did not specify a primary educational objective or was not directly related to the education of hospital personnel was placed in the non-education category, e.g. "develop an ICU," "provide salaried emergency ward staff coverage," "investigate the possibility of providing home care services."

However, a further classification of kinds of changes was developed during Phase II. Content analysis divided hospital changes into six major areas pertinent to hospital function and structure - education, personnel, equipment, physical plant, selected specialty services and community activities. Assignment of a change to multiple categories was made when a change pertained to more than one category. Multiple scoring eliminated the need to artificially limit a change's areas of pertinence. A detail breakdown of the major categories of change may be found in Appendix K.

In preparation for quantitative analysis, data were numerically totaled indicating: total number of hospital changes, total number of educational changes (and percent of education of total), and total number of non-educational changes (and percent of non-ed out of total). Data will be reported in the results section.

Consultant Recommendations in Experimental Hospitals

Prior to analysis of written and oral recommendations validity criteria were established for their specification and classification.

1. A valid recommendation must be independent and not contingent upon the implementation of other recommendations.

2. A valid recommendation advocating encouragement and support of a proposed or pre-existing activity must include specific methods or techniques.

3. A valid recommendation pertinent to a pre-existing activity must suggest modifications of the activity.

As with reported hospital changes recommendations were classified as educational or non-educational.

Valid recommendations were characterized as educational if they met one of the following criteria:

1. An educational recommendation must relate to individual or group educational activity for doctors, nurses, or paramedical personnel, e.g., "hold CPC once per month", "discontinue monthly death conference", "send nurse to CCU training program at a university medical center", "use medical audit for educational purposes", "obtain more journals for library".

2. Aneducational recommendation must relate to the appointment or inclusion of personnel to fill educational roles, e.g., director of medical education, director of in-service education, secretarial assistance for education, outside guest speakers.

3. An educational recommendation must relate to the budgeting of funds for education, including allotment of salaries, equipment, space or facilities.

4. An educational recommendation must relate to obtaining, retaining and/or training medical

students, interns, externs or residents, e.g., "have staff physicians develop policies for use of private patients in education of house officers."

5. An educational recommendation must describe policies or methods to be employed in the formation and/or development of an educational program, e.g., "inform trustees of education program," "share responsibility for program among staff," "change by-laws," "plan to invite neighboring hospital staff."

Valid recommendations were characterized as non-educational if they related to potentially non-educational hospital systems for which the recommendations did not specify an educational use, e.g., "develop an ICU," provide computer management for accounting," "investigate the possibility of providing hospital home care service."

In order to determine implementation levels of recommendations, the following criteria were applied. When the four hospital representatives interviewed unanimously agreed upon the status of a recommendation, it was appropriately classified as implemented (I), rejected (R) or partially implemented (IPI). When agreement concerning a recommendation was not unanimous the response of that individual whose hospital function most closely corresponded to the nature of the recommendation was used according to the above classification. Data on the nature and frequency of Phase I and Phase II recommendations implemented will be presented in the results section.

PRESENTATION AND DISCUSSION OF RESULTS

Analysis of the dependent measures (or change data) gathered during Phase II were much more voluminous and extensive than such data gathered for Phase I. As a result, the present chapter will constitute a much more extensive account of the impact of the consultation on educational program development. Discussion of the results of Phase II endeavors will begin with analysis of the following change measures:

1. What was the nature and extent of Phase II recommendations transmitted by consultants and implemented by the hospitals?

2. What was status of Phase I recommendations after an 18 month implementation period?

3. What was the nature and extent of Phase II changes occurring in both experimental and control hospitals?

Discussion of a comparative analysis undertaken on hospital changes in experimental and control hospitals will follow.

A subsequent section will discuss utilization of the above dependent measures in determining the effect of the various "fixed" independent variables (i.e., hospital characteristics, medical staff characteristics, and consultant characteristics) on the nature and degree of change. This latter section is derived from the question posed by the contract objective: What factors facilitate or inhibit implementation of education consultation at community hospitals?

ANALYSIS OF TRANSMISSION AND IMPLEMENTATION STATUS OF RECOMMENDATIONS

Transmission of Recommendations

A quantitative summary of recommendations transmitted to experimental hospitals receiving education consultation during the two phases of the project (1967-1968 and 1968-1969) appear in Table 15. The table differentiates between recommendations that were transmitted in written form (which incidently had a more systematic preparation and review by both the consultant and the Postgraduate Medical Institute) and oral recommendations transmitted more informally during the course of conversations and visits between the medical consultant and the hospital staff. The most obvious inferences that can be made from the data are: 1) oral recommendations occur much less frequently than written recommendations, and 2) the most frequent content of recommendations pertains to educational in contrast to non-educational issues, i.e., 318 written recommendations in 1967-1968 and 278 written recommendations in 1968-1969 of a combined total over a two year period of 740 recommendations which are pertinent

Table 15

FREQUENCY OF RECOMMENDATIONS TRANSMITTED-PHASE I AND PHASE II

		WRITTEN (N = 36)			ORAL (N = 29)		
		EDUCATIONAL	NON-EDUCATIONAL	TOTAL	EDUCATIONAL	NON-EDUCATIONAL	TOTAL
PHASE I	# of rec's transmitted	318	35	353	70	20	90
1967-1968	$\bar{X}$	8.83	.97	9.81	2.41	.69	3.10
	S.D.	4.11	1.38	4.77	1.57	.88	1.92
	# hospitals receiving rec's	36	14	36	28	14	29
		WRITTEN (N = 30)			ORAL (N = 24)		
		EDUCATIONAL	NON-EDUCATIONAL	TOTAL	EDUCATIONAL	NON-EDUCATIONAL	TOTAL
PHASE II	# of rec's transmitted	278	17	295	74	12	86
1968-1969	$\bar{X}$	9.27	.59	9.83	3.08	.50	3.58
	S.D.	5.14	1.13	5.42	2.67	.65	2.66
	# hospitals receiving rec's	30	9	30	23	10	24

to educational matters (e.g., the format of educational programs, etc.).

Further examination of Table 15 indicates approximately the same mean number of written recommendations were transmitted to hospitals in Phase II ($\overline{X}$=9.83) as were transmitted in Phase I ($\overline{X}$=9.81). What does appear to be significantly different however is that approximately 1/6 fewer hospitals (N=6) received written recommendations in Phase II in contrast to Phase I, i.e., a few hospitals chose to drop out and/or some were less willing to meet with the medical consultant during the second year of available consultation. (See Consultation Implementation pp. 102-108). All in all, the data suggest that where continued interaction between the medical consultant and the hospital extended into the second year, the same general pattern of type and number of recommendations pertaining to educational or non-educational content and via the formats of written versus oral communication were manifest.

Comparison of Degree of Implementation of Phase I and Phase II Recommendations

Frequency of Recommendations Undergoing Complete Implementation

Examination of Table 16 permits one to draw inferences about the frequency with which recommendations were completely implemented during the two phases of the project. Examination of the table quickly reveals that of the 318 educational recommendations transmitted during Phase I, a total of 118 (37 %) were completely implemented at the time of the ensuing field survey (four months after the transmission date of the recommendations). Furthermore, the mean number of educationally oriented recommendations that were implemented by a given hospital was 3.3 and the number of hospitals involved in this portion of the sample was 36. Similarly, the table indicates that of the 35 non-educational written recommendations transmitted, 12 (34%) were fully implemented. Again, the data in Table 16, as that in Table 15, indicates or reflects the differential frequency of oral to written recommendations.

Since data are relatively sparse for non-educational and/or oral recommendation, caution should be used in drawing inferences that the apparent differences in rates

Table 16

FREQUENCY OF RECOMMENDATIONS TRANSMITTED-PHASE I AND PHASE II

		WRITTEN			ORAL		
		EDUCATIONAL	NON-EDUCATIONAL	TOTAL	EDUCATIONAL	NON-EDUCATIONAL	TOTAL
PHASE I 1967-1968	#	118 (37.11%) 318 rec's transmitted	12 (34.29%) 35 rec's transmitted	130(36.83%) 353 rec's transmitted	29 (41.43%) 70 rec's transmitted	6 (30.00%) 20 rec's transmitted	35 (38.89%) 90 rec's transmitted
	$\overline{X}$	3.27	.86	3.61	1.04(43.03%)	.43(35.71%)	1.46(38.42%)
	S.D.	2.52	.91	2.85	.94	.62	1.28
	N.	36	14	36	28	14	29
		EDUCATIONAL	NON-EDUCATIONAL	TOTAL	EDUCATIONAL	NON-EDUCATIONAL	TOTAL
PHASE II 1968-1969	#	156 (56.12%) 278 rec's transmitted	15 (88.24%) 17 rec's transmitted	171(57.97%) 295 rec's transmitted	44 (59.46%) 74 rec's transmitted	10(83.33%) 12 rec's transmitted	54 (62.79%) 86 rec's transmitted
	$\overline{X}$	5.20(54.11%)	1.67(77.77%)	5.70(54.81%)	1.91(55.49%)	1(85.00%)	2.25(58.03%)
	S.D.	3.94	1.49	4.14	1.79	.45	1.88
	N	30	9	30	23	10	24

of complete implementation of the various categories of recommendations being transmitted are statistically significant. What does stand out as a provocative finding is that the rates of complete implementation for recommendations transmitted during Phase I is considerably lower than the rates of complete implementation of recommendations transmitted during Phase II. There are alternative hypotheses to explain this apparent difference. Among them is the fact that the duration of the available implementation period for recommendations transmitted during Phase II was approximately 7 months in contrast to an implementation period for recommendations transmitted during Phase I of approximately 4 months. Also, the differential rates of completed implementation may have been due to a greater degree of "readiness" in the second year on the part of the institutions receiving the recommendations in contrast to their "readiness" to implement recommendations during the first year of the study. A third possible explanation could relate to the drop-out of or lack of cooperation to collect data by six hospitals in the second year of the study. These hospitals had proportionately lower rates of implementation of first year recommendations. However, it would seem to be most reasonable to note the relative increase in complete implementation rate during the second year in contrast to the first year of the study. The data in this table should be considered with reference to Tables 17 and 18 which follow.

Frequency of Partial Implementation of Recommendations Transmitted to Hospitals

Table 17 contains a summary of recommendations which were reported by hospital personnel as being partially implemented between the time of receipt of the recommendation and the time of the field interview. In the case of Phase I recommendations the implementation interval was approximately four months, and in the case of Phase II recommendations the implementation interval was approximately 7 months. An illustrative reading of the table indicates that of the 318 Phase I recommendations pertaining to education, 64 (20%) were partially implemented; an average of 1.7 partial implementations of such educational recommendations by the 36 hospitals involved. Again, the relative infrequency of non-educational recommendations (both written and oral) and their partial implementation suggests caution in their interpretation.

Table 17

FREQUENCY OF RECOMMENDATIONS TRANSMITTED-PHASE I AND PHASE II

		WRITTEN			ORAL		
		EDUCATIONAL	NON-EDUCATIONAL	TOTAL	EDUCATIONAL	NON-EDUCATIONAL	TOTAL
PHASE I 1967-1968	#	64 (20.13%) 318 rec's transmitted	5 (14.29%) 35 rec's transmitted	69 (19.55%) 353 rec's transmitted	6 (8.57%) 70 rec's transmitted	2 (10%) 20 rec's transmitted	8 (8.89%) 90 rec's transmitted
	$\bar{X}$	1.78	.36	1.92	.21 (7.74%)	.14(14.29%)	.28(12.07%)
	S.D.	2.03	.48	2.18	.77	.35	.78
	N	36	14	36	28	14	29
		EDUCATIONAL	NON-EDUCATIONAL	TOTAL	EDUCATIONAL	NON-EDUCATIONAL	TOTAL
PHASE II 1968-1969	#	18 (6.48%) 278 rec's transmitted	1 (6.44%) 17 rec's transmitted	19 (6.67%) 295 rec's transmitted	6 (8.11%) 74 rec's transmitted	0 (0%) 12 rec's transmitted	6 (6.98%) 86 rec's transmitted
	$\bar{X}$	.62(9.11%)	.11(11.11%)	.66(9.66%)	.26(10.08%)	0 (0%)	.25(9.32%)
	S.D.	.72	.31	.71	.44	0	.43
	N	30	9	30	23	10	24

Perhaps the most salient finding reflected in Table 17 is the highly depressed rate of partial implementation of transmitted recommendations during the Phase II period in contrast to the Phase I. Again the same three alternative explanations may account for the finding, i.e., hospitals may be more ready in the second year to completely implement (less likely to do a partial job), hospitals likely to do a partial job have dropped out in the second year, and lastly, since more time is available in the second year, fewer jobs will be left incomplete.

Combined Frequency of Fully and Partially Implemented Recommendations

Examination of Table 18 provides a fuller opportunity to draw inferences relating to total implementation (a combination of partial and completely implemented recommendations). The pattern here is somewhat clearer than in the prior two tables, in showing that the approximate implementation rate of Phase I educational recommendations was approximately 55% in contrast to an implementation rate of approximately 63% for Phase II. Somewhat similarly the combined implementation rate for written non-educational recommendations was approximately 49% for Phase I in contrast to approximately 94% for Phase II. (Caution should be used in the interpretation of this marked difference in light of the relatively small number of cases involved.) Also, the net impression of a higher frequency of implementation of recommendations transmitted during Phase II is maintained but not as dramatically as are the comparisons manifested in the examination of either completely implemented or partially implemented recommendations. The same hypotheses cited earlier may account for the apparent discrepancy.

Implementation Status of Phase I Recommendation at the End of 4 and 18 Months

As discussed in a preceding section, during Phase II interviews, data were gathered not only on the rate of recommendations implemented for Phase II recommendations but also pertinent to the status (18 months after transmittal) of recommendations transmitted during Phase I. The following discussions will center around the implementation status of Phase I recommendations at the

Table 18

FREQUENCY OF RECOMMENDATIONS COMPLETELY AND/OR PARTIALLY IMPLEMENTED

		WRITTEN				ORAL			
		EDUCATIONAL	NON-EDUCATIONAL	TOTAL	N.R.	EDUCATIONAL	NON-EDUCATIONAL	TOTAL	N.R.
PHASE I 1967-1968	#	$\frac{182}{318}$ (54.72%) rec's transmitted	$\frac{17}{35}$ (48.58%) rec's transmitted	$\frac{199}{353}$ (56.37%) rec's transmitted	3	$\frac{35}{70}$ (50.00%) rec's transmitted	$\frac{8}{20}$ (40.00%) rec's transmitted	$\frac{43}{90}$ (47.78%) rec's transmitted	10
	$\bar{X}$	5.10	1.21	5.53		1.25(50.77%)	.57(50.00%)	1.73(50.49%)	
	S.D.	3.40	1.21	3.98		1.18	.62	1.38	
	N	36	14	36		28	14	29	
		EDUCATIONAL	NON-EDUCATIONAL	TOTAL	N.R.	EDUCATIONAL	NON-EDUCATIONAL	TOTAL	N.R.
PHASE II 1968-1969	#	$\frac{174}{278}$ (62.59%) rec's transmitted	$\frac{16}{17}$ (94.13%) rec's transmitted	$\frac{190}{295}$ (64.41%)	2	$\frac{50}{74}$ (67.57%)	$\frac{10}{12}$ (83.33%)	$\frac{60}{86}$ (69.77%)	2
	$\bar{X}$	5.80(62.79%)	1.78(88.88%)	6.33(63.47%)		2.17(65.57%)	1 (85.00%)	2.50(67.35%)	
	S.D.	4.15	1.40	4.38		1.88	.45	1.94	
	N	30	9	30		23	10	24	

end of Phase II (18 months after transmittal) accompanied by a comparative inspection of the same recommendations at the end of Phase I (4 months after transmittal). This dual inspection of the same recommendations was undertaken in an attempt to determine both short and long term effects of consultation.

Examination of Table 19 permits us to set the stage for an analysis of changes in the status of implemented and rejected Phase I recommendations throughout the period of Phase II. Table 19 states in essence that of the 353 recommendations transmitted in Phase I, a total of 191 (56%) were partially or completely implemented. within four months after being received by the hospitals Furthermore, 151 recommendations were not implemented in any manner at the end of the four month implementation period.

Inspection of Table 20 permits the reader to note the long term status of initially implemented or rejected recommendations. It will be noted that the summation of the recommendations fully and partially implemented and the recommendations rejected do not total to the 353 transmitted. The 16 recommendations in the no response column relate to a small group of hospitals which did not choose to continue participation in the study during the second year and/or which data pertinent to the 18 month status were not available. (More will be said elsewhere about such attrition and the significance thereof). For the current purpose it indicates that 334 (95%) of an originally transmitted 353 recommendations involving 35 hospitals represent the body of data on which change in implementation of recommendations can be focused. An illustrative reading of the table might proceed as follows: of 126* initially and completely implemented recommendations,

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* 126 includes all initially completely implemented recommendations of which there were implementation data at the end of 18 months (130 minus 4).

Table 19

STATUS OF RECOMMENDATIONS AT END OF PHASE I
(4 months after transmitted)

(N=36)

	TOTAL # REC'S	INITIAL IMPLEMENTATION			REJECTION	NO RESPONSE
		FULLY (I)	PARTIALLY (P)	F + P (IPI)		
NUMBER RECOMMENDATIONS	353 ED 318 NON-ED 35	130 (36.83%) ED 118 NON-ED 12	69 (19.55%) ED 64 NON-ED 5	199 (56.37%) ED 182 NON-ED 17	151 (42.78%) ED 134 NON-ED 17	3 (1%) ED 2 NON-ED 1
$\overline{X}$	9.80 ED 8.83 NON-ED .97	3.61 ED 3.27 NON-ED .86	1.92 ED 1.78 NON-ED .36	5.53 ED 5.10 NON-ED 1.21	4.20 ED 3.72 NON-ED 1.21	
S.D.	4.77 ED 4.10 NON-ED 1.38	2.85 ED 2.52 NON-ED .91	2.18 ED 2.03 NON-ED .48	3.98 ED 3.40 NON-ED 1.21	3.58 ED 3.23 NON-ED .94	

Table 20

IMPLEMENTATION STATUS OF PHASE I WRITTEN RECOMMENDATIONS AFTER 4 AND 18 MONTHS

IMPLEMENTATION STATUS OF RECOMMENDATIONS AFTER 4 MONTHS	IMPLEMENTATION STATUS OF RECOMMENDATIONS AFTER 18 MONTHS				
		FULLY	PARTIALLY	REJECTED	NO RESPONSE
FULLY - 130 N=30	NUMBER OF RECOMMENDATIONS	96	4	26	4
	$\overline{X}$	3.20	.13	.87	
	S.D.	2.15	.34	1.28	
	NUMBER OF HOSPITALS	28	4	13	1
PARTIALLY - 69 N=23	NUMBER OF RECOMMENDATIONS	40	5	24	0
	$\overline{X}$	1.74	.22	1.04	
	S.D.	1.82	.41	1.46	
	NUMBER OF HOSPITALS	18	5	11	0
REJECTED - 151 N=30	NUMBER OF RECOMMENDATIONS	64	1	74	12
	$\overline{X}$	2.13	.03	2.47	
	S.D.	1.77	.18	2.33	
	NUMBER OF HOSPITALS	25	1	24	3
NO RESPONSE - 3					

96 remain completely implemented after 18 months, whereas four are now partially operational and 26 have been terminated completely and rejected. When the data in Table 20 are compared with that of Table 19 , one can begin to infer that approximately 75% (96/126) of the initially (completely) implemented recommendations survive for a period of as long as 18 months after their initial implementation in contrast to approximately 25% of such initially (completely) implemented recommendations which fail to survive.

Similarly, one can say that of the intially partially implemented recommendations (N=69), five (7%) continue to be implemented in partial form, 40 (58%) have becomed implemented fully, and 24 (35%) have been dropped completely by the end of 18 months. It is interesting to note that the recommendations which are only partially implemented initially have a greater likelihood of being implemented fully by the end of an 18 month period than of being terminated and dropped.

Likewise, further examination of Table 20 indicates that of the originally rejected 139* recommendations, 74 continue to be rejected (i.e., have not been implemented either partially or wholly). However 64 have been completely and 1 has been partially implemented. The interesting element here appears to be that there is about a 46% chance for a recommendation which has been initially rejected to become fully implemented during a follow up period of approximately 18 months.

Of particular interest in this Table is the fact that although the data derive generally from 35 hospitals who continued to participate in the study, it should be noted that the variation in numbers in the extreme left column indicates that somewhat less than the 35 hospitals are involved in that class of recommendations. For instance, the appearance of an N of 30 in the left column, pertaining to completely implemented recommendations, means that five out of the 35 hospitals did not implement completely one or more of the recommendations transmitted to them. In analogous fashion the appearance of N=30 in the cell pertaining to initially rejected recommendations indicates that there were five hospitals who received recommendations and who failed to reject one or more of the received recommendations. In a sense this latter group of hospitals may be seen as a class of "open-minded", "eager to change", "change prone", etc., hospitals, in contrast to the five hospitals who failed to completely implement one or more of the transmitted recommendations and which may be characterized as "resistant", "reserved", "non-change prone", etc., hospitals.

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* 139 includes all initially rejected recommendations of which there were 18 month status data. (151 minus 12).

All in all, the salient implications of Table 20 are that the delayed status of initially implemented recommendations (completely or partially) is in all likelihood for a continued and further implementation and that even in the case of initially rejected recommendations a substantial number do ultimately get implemented.

Table 21 has been prepared as a derivative of Table 20 in a manner to permit an assessment of the fate of recommendations transmitted in Phase I after a history of eighteen months listed under such headings as continued rejection, increased implementation, maintenance and attrition. The estimate of continued rejection is simply the number of recommendations initially rejected (not implemented) which at the end of an eighteen month period are still not implemented (even in partial fashion). Table 21 indicates that approximately 53% (74 of an initial 151 rejected recommendations) are still rejected at the end of an eighteen month period. Another way of interpreting this number is to examine the number of continued rejections in contrast to the total number of recommendations transmitted (i.e., 74 over 334) which when computed indicates a 22% rejection rate of all transmitted recommendations or a 78% implementation rate (complete plus partial).

Similarly, examination of Table 21 entitled Maintenance indicates that a total of 101 initially implemented (either completely or partially) recommendations persist for the duration of the eighteen month period. This observation may also be characterized in terms of the percentage of recommendations continued in their implementation in comparison to the total number of recommendations initially implemented. In this particular instance this would be 101 over 195 or approximately 52%.

Examination of Table 21, on the other hand, indicates that in the case of 105 recommendations which were initially rejected or partially implemented, increased implementation

Table 21

COMPARISON OF 4 AND 18 MONTH IMPLEMENTATION STATUS OF RECOMMENDATIONS ACCORDING TO CONTINUED REJECTION, MAINTENANCE, INCREASED IMPLEMENTATION AND ATTRITION

TABLE VII A

RECOMMENDATIONS INITIALLY AND CONTINUALLY REJECTED

(N = 30)

	TOTAL # & %	MEAN #/hosp. CONTINUALLY REJECTED	S.D.	# HOSPITALS CONTINUING TO REJECT
CONTINUED REJECTION	74/139 (53.24%)	2.47	2.38	24

TABLE VII B

RECOMMENDATIONS MAINTAINING THEIR INITIAL IMPLEMENTATION STATUS

(N = 31)

	RATIO OF MAINTAINING STATUS TO INITIAL IMPLEMENTATION	MEAN #/hosp. MAINTAINING STATUS	S.D.	# HOSPITALS MAINTAINING INITIAL IMPLEMENTATION STATUS
MAINTENANCE OF INITIAL (FULL OR PARTIAL) STATUS	101/195 (51.79%)	3.26	2.21	28

TABLE VII C

RECOMMENDATIONS INCREASING INITIAL IMPLEMENTATION STATUS

(N = 33)

	RATIO OF INCREASED TO INITIAL IMPLEMENTATION	MEAN #/hosp. INCREASING IMPLEMENTATION	S.D.	# HOSPITALS INCREASING IMPLEMENTATION STATUS
INCREASED IMPLEMENTATION ON INITIAL STATUS	105/208 (50.48%)	3.18	2.67	30

TABLE VII D

RECOMMENDATIONS REGRESSING FROM INITIAL IMPLEMENTATION STATUS

(N = 31)

	RATIO OF REGRESSION TO INITIAL IMPLEMENTATION	MEAN #/hosp. REGRESSING IMPLEMENTATION	S.D.	# HOSPITALS REGRESSING FROM INITIAL IMPLEMENTATION STATUS
ATTRITION OF INITIAL STATUS	54/195 (27.69%)	1.74	1.57	22

took place (i.e., changes occurred from initially rejected to partial or full implementation or from partial implementation to full implementation). Again, if this rate of increased implementation is compared with the total number of initially rejected or partially implemented recommendations approximately 50% (105/208) of these recommendations increased in their implementation or their degree of implementation during the eighteen month period.

Finally, examination of Table 21 entitled Attrition reveals that there were a total 54 recommendations which initially were fully implemented or partially implemented and which during the course of the eighteen month period shifted to a lesser degree of implementation (i.e., fully implemented to partially implemented, partially implemented to no implementation, fully implemented to no implementation). Appropriate computations with the data in this category indicate that approximately 28% of initially implemented recommendations underwent reduction or termination.

Table 22 represents another way of organizing the data relating to the continuity of implementation of the recommendations. In this table the data have been organized so as to ignore initial states of implementation and to examine the status of the 334 transmitted recommendations at the end of the eighteen month period of possible implementation. The data here essentially indicate that 200 of the 334 recommendations or approximately 60% were implemented fully at the end of the eighteen month period. Ten recommendations of the 334 or approximately 3% of the total recommendations were partially implemented. Finally, approximately 37% (124 of 334 initially transmitted recommendations) were not in a state of partial or complete implementation, hence, must be considered rejected. This latter set of data is perhaps the source of the best recommendations regarding potential expectations during the course of such educational consultation as has been described in the present report, i.e., all things considered, a full implementation rate of approximately 60% might be expected.

As way of summary, Table 22 indicates that first year recommendations were followed up twice - four and 18 months after they were submitted. Second year recommendations were followed up once - seven months after submission. Within four months 37% percent of first year recommendations were fully implemented. An additional 19 percent were partially

Table 22

IMPLEMENTATION STATUS OF WRITTEN RECOMMENDATIONS

Recommendation Status	1st Yr. Recs. 4 Month Follow-up	1st Yr. Recs. 18 Month Follow-up	2nd Yr. Recs. 7 Month Follow-up
Total Number	353	334*	295
Fully Implemented	130 (37%)	200 (60%)	171 (58%)
Partially Implemented	69 (19%)	10 (3%)	19 (7%)
Rejected	151 (43%)	124 (37%)	103 (35%)
Unknown	3 (1%)	---	2 (1%)

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*The discrepancy between the 4 month and 18 month follow-up figures in the total number of first year recommendations reflects the withdrawal of two experimental hospitals from the study between the two follow-up periods. At the 4 month follow-up, these two hospitals had recommendation implementation rates comparable to the mean of the other experimental hospitals.

implemented, that is, action to implement recommendations had been initiated but not yet completed. Forty-three percent of the recommendations were rejected.

As discussed earlier, field evaluators reported that hospitals were often unable to implement recommendations within four months after submission. For example, problems such as the time needed to obtain staff approval or to get trustees or administration to allocate funds, often prevented full implementation within the four months. It was concluded that a longer follow-up might produce more valid indications of the hospitals' ability to act on consultants' recommendations. This notion is supported by findings summarized in the 18-month follow-up column of Table 22 which shows that full implementation increased from 37 percent to 60 percent at the end of the 18 months, that partial implementation dropped from 19 percent to 3 percent, and that recommendations rejected decreased from 43 percent to 37 percent. Though there were movements in all directions among implementation status categories, the net effect was that after 18 months the partially implemented category disappeared while the fully implemented category increased markedly and the rejected category stayed essentially the same. The second year's seven-month implementation period yielded results comparable to those found at the end of the 18-month follow-up of the first year's recommendations.

Content Analysis of Consultant Recommendations

Phase I and Phase II recommendations were content analyzed to determine what kinds of recommendations were more frequently implemented or rejected, what kinds of recommendations were more likely to stay implemented over an extended period of time, as well as the inverse question of what kinds of recommendations, after an initial implementation, are then rejected. The content breakdown of Phase I recommendations after a 4 month implementation period was presented in earlier discussions (pp. 53-56).

Content Analysis of Phase I Recommendations After 18 Months

Table 23 presents a content analysis of general

Table 23

Numerical Summary of the Implementation Status of General Categories of Phase I Recommendations at the End of 4 and 18 Months

		4 MONTH IMPLEMENTATION				18 MONTH IMPLEMENTATION									
	TOTAL (T)	FULL IMPLEMENTATION (I)	PARTIAL IMPLEMENTATION (P)	REJECTION (R)	NO RESPONSE (NR)	CONTINUED REJECTION (R-R)	CONTINUED FULL IMPLEMENTATION (I-I)	CONTINUED PARTIAL IMPLEMENTATION (P-P)	INCREASED IMPLEMENTATION (R-P)	INCREASED IMPLEMENTATION (R-I)	INCREASED IMPLEMENTATION (P-I)	ATTRITION (I-P)	ATTRITION (I-R)	ATTRITION (P-R)	NO RESPONSE (NR)
TOTAL NUMBER OF RECOMMENDATIONS	353	130	69	151	3	74	96	5	1	64	40	4	26	24	19
I. EDUCATIONAL RECOMMENDATIONS	318	118	64	133	3	64	90	4	1	59	38	3	20	22	17
A. PHYSICIAN EDUCATION RECOMMENDATIONS	296	109	60	124	3	58	81	4	1	58	37	3	20	19	15
1. EDUCATIONAL PROGRAM RESOURCES	140	46	33	60	1	30	32	2		25	25	1	11	6	8
a. Financial Support for Program Development, including Hospital, Staff, and Other Sources	24	7	8	9		5	4	1		4	6		3	1	
b. Educational Facilities and Materials, including Audio-Visual Aids and Library Provisions	27	9	5	12	1	6	5	1		5	3	1	3	1	2
c. Hospital Personnel, including DME, Pathologist, Secretaries and Librarian	24	11	3	10		4	7			3	3		2		5
d. External Educational Resources, including Education Agencies, Visiting Consultants, and Outside Speakers	44	14	10	20		8	12			11	7		2	3	1
e. Regional Interhospital Collaboration, including DME. Funds, Lectures and Teaching Personnel	21	5	7	9		7	4			2	6		1	1	
2. EDUCATIONAL PROGRAM PLANNING	62	21	11	29	1	12	20	1	1	16	6			4	2
a. Program Assessment, including Evaluation of Programs, Staff Needs and Interests, and Community Needs	7	2	1	4		3	2			1	1				
b. Program Design, including Educational Goals, Structuring of Activities, and Rotating Responsibility for Educational Planning and Implementation among Staff	32	11	8	13		5	10		1	7	4			4	1
c. Scheduling and Attendance of Educational Programs, including Preparation and Publicity of Programs, and Keeping Attendance and Minutes of Meetings	23	8	2	12	1	4	8	1		8	1				1
3. EDUCATIONAL PROGRAM IMPLEMENTATION	94	42	16	35	1	16	29	1		17	6	2	9	9	5
a. Patient or Case Centered Education Activities, including Grand Rounds, CPC's, Case Presentations, and Case Literature Review	52	24	9	19		9	17			10	3	1	5	6	1
b. Subject-oriented Education Activities, including Courses and Lecture Programs, Discussion Groups, and Specialty-care Education Programs	18	7	4	7		4	3	1		2	2	1	2	1	2
c. Routine Hospital Meetings (Business and Committee) and the Education Program	8	4	2	2			3			2	1		1	1	
d. House Officer Training, including Resident and Intern Training	11	6	1	3	1	1	5			2			1	1	1
e. Miscellaneous Education Programs, including Self-assessment Tests and Sending Physicians Out for Postgraduate Training	5	1		4		2	1			1					1
B. NURSING AND ALLIED HEALTH RECOMMENDATIONS	22	9	4	9		6	9			1	1			3	2
1. RESOURCES, including Director of In-service Teaching, Visiting Nurse Consultants, and Inter-hospital Director of Nursing	6	1	2	3		3	1							2	
2. JOINT PHYSICIAN-NURSE EDUCATION ACTIVITIES, including Mutual Physician-Nurse Planning and Programs	13	7	2	4		3	7				1			1	1
3. ESTABLISHMENT OF IN-SERVICE EDUCATION, including Teaching of Nurses by Medical Staff and Programs for Paramedical Personnel	3	1		2			1			1					1
II. NON-EDUCATION RECOMMENDATIONS, including Making Wider Use of Emergency Room, Establishing Clinics, Establishing Full or Partially Paid Department Chiefs, Developing Plans Relating to Regional Services	35	12	5	18		10	6	1		5	2	1	6	2	2

categories of Phase I recommendations after 4 and 18 months of possible implementation. (A more detailed content breakdown may be found in Appendix J,pp. J-2a-f.) The 4 month implementation period columns indicate the frequency of kinds of recommendations that were fully, partially or not implemented at the end of that time period. The 18 month columns categorize recommendations by their maintenance (continued), increased implementation or attrition status*.

Of particular note with regard to the 18 months implementation status is that the continued partial implementation category virtually disappears. Recommendations that were partially implemented at the end of 4 months have either been fully implemented or rejected at the end of 18 months. Most common recommendations continuing to be fully implemented are those in the area of physician educational program planning (95%, 20/21), specifically those recommendations pertaining to education program assessment and those dealing with mechanics of program implementation such as scheduling and publicity activities. Nursing and allied health related recommendations also have a high incidence of continued full implementation (100%, 9/9) at the end of 18 months. External educational resources for program development such as the use of visiting consultants and outside speakers is yet another area of high continued full implementation (86%, 12/14). The lowest frequencies of continued full implementation appear to fall in the classifications of non-education recommendations (50%, 6/12), financial support for program development (57%, 4/7), educational facilities and materials (56%, 5/9), and implementation of subject-oriented education activities (43%, 3/7). Caution should be made in interpretation of some of the data as some results are based on low frequencies.

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*Maintenance - those recommendations maintaining the same implementation status at the 4 and 18 month assessment periods. Increased implementation - those recommendations either partially implemented or rejected at the end of 4 months that became fully or partially implemented at the end of 18 months.

Attrition - those recommendations initially fully or partially implemented that became partially implemented or rejected at the end of 18 months.

Recommendations which tend to remain rejected after 18 months are highest in the classifications of regional interhospital collaboration (78%, 7/9), program assessment (75%, 3/4), resources for nursing and allied health education (100%, 3/3) and joint physician-nurse education activities (75%, 3/4). Content classifications with the highest frequencies of recommendations initially rejected which moved to either partial or full implementation are scheduling and attendance of education programs (33% continued rejection, 4/12), program design (38%, 5/13) provision of hospital personnel such as DME and librarians for educational program development (40%, 4/10) and use of external educational resources (40%, 8/20).

Under the categories of increased implementation that is, recommendations, initially rejected or partially implemented, undergoing partial or full implementation after 18 months, no outstanding content classifications emerge. Generally, the recommendations listed under non-education recommendations have a lower increase in implementation status (30%, 7/23) than education recommendations (50%, 98/197). The same holds true for the categories of attrition, that is, those recommendations, initially implemented, which decreased to partial implementation or were rejected. Classifications within the areas of education recommendations tend to be similar in attrition rates and the non-education recommendations tend to have a higher attrition rate (53%, 9/17) than education recommendations (25%, 45/182).

Content Analyses of Phase II Recommendations

During Phase II of the project, consultants submitted 295 recommendations, of which 287 were classified as having a primary educational objective and 17 were classified as being non-educational in nature. (Table 24 provides a summary of the content analysis of Phase II recommendations. A more detailed breakdown is contained in Appendix J, pp. J-3a-f). As in Phase I, consultants primarily directed their activities toward developing physician education programs in community hospitals. Of the 278 education-related recommendations, 270 (97%) referred specifically to physician and 8 (3%) to nursing and allied health education.

Forty-three percent (117) of physician education recommendation pertained to the development of program resources such as financial support, educational facilities and personnel. The other two classifications of program planning and program implementation received approximately

Table 24

Numerical Summary of the Implementation Status of General Categories of Phase II Recommendations

	Total	Full Implementation	Partial Implementation	Rejection	No Response
TOTAL NUMBER OF RECOMMENDATIONS	295	171	19	103	2
I. EDUCATIONAL RECOMMENDATIONS	278	156	18	102	2
A. PHYSICIAN EDUCATION RECOMMENDATIONS	270	153	18	97	2
1. EDUCATIONAL PROGRAM RESOURCES	117	63	4	50	
a. Financial Support for Program Development, including Hospital, Staff, and Other Sources	26	15	1	10	
b. Educational Facilities and Materials, including Audio-Visual Aids and Library Provisions	13	10		3	
c. Hospital Personnel, including DME, Pathologist, Secretaries and Librarian	32	21	1	10	
d. External Educational Resources, including Education Agencies, Visiting Consultants, and Outside Speakers	29	16		13	
e. Regional Interhospital Collaboration, including DME, Funds, Lectures and Teaching Personnel	17	1	2	14	
2. EDUCATIONAL PROGRAM PLANNING	80	43	11	25	1
a. Program Assessment, including Evaluation of Programs, Staff Needs and Interests, and Community Needs	25	14	5	6	
b. Program Design, including Educational Goals, Structuring of Activities, and Rotating Responsibility for Educational Planning and Implementation among Staff	38	17	3	17	1
c. Scheduling and Attendance of Educational Programs, including Preparation and Publicity of Programs, and Keeping Attendance and Minutes of Meetings	17	12	3	2	
3. EDUCATIONAL PROGRAM IMPLEMENTATION	73	47	3	22	1
a. Patient or Case Centered Education Activities, including Grand Rounds, CPC's, Case Presentations, and Case Literature Review	36	26	1	9	
b. Subject-oriented Education Activities, including Courses and Lecture Programs, Discussion Groups, and Specialty care Education Programs	16	9		7	
c. Routine Hospital Meetings (Business and Committee) and the Education Program	12	8		4	
d. House Officer Training, including Resident and Intern Training	4	3	1		
e. Miscellaneous Education Programs, including Self-assessment Tests and Sending Physicians Out for Postgraduate-Training	5	1	1	2	1
B. NURSING AND ALLIED HEALTH RECOMMENDATIONS	8	3		5	
1. RESOURCES, including Director of In-service Teaching, Visiting Nurse Consultants, and Inter-hospital Director of Nursing	4	1		3	
2. JOINT PHYSICIAN-NURSE EDUCATION ACTIVITIES, including Mutual Physician-Nurse Planning and Programs	2	1		1	
3. ESTABLISHMENT OF IN-SERVICE EDUCATION, including Teaching of Nurses by Medical Staff and Programs for Paramedical Personnel	2	1		1	
II. NON-EDUCATION RECOMMENDATIONS, including Making Wider Use of Emergency Room, Establishing Clinics, Establishing Full or Partially Paid Department Chiefs, Developing Plans Relating to Regional Services	17	15	1	1	

the same number of recommendations, 80 (30%) and 73 (27%) respectively. Within these latter two classifications, recommendations pertaining to program design and implementation of patient centered education programs were more common.

In terms of recommendations implemented, non-education recommendations had a much higher full implementation rate (88%, 15/17) than education recommendations (57%, 153/270). However, the low frequency of non-education recommendations in relation to education recommendations should be taken into consideration when interpreting the results. It is of particular note that both of these implementation rates are substantially greater than Phase I implementation rates at the end of 4 months. (Phase I: full implementation of non-education recommendations was 34%, 12/35; full implementation of education recommendations was 37%, 118/318). As stated earlier this finding may be a reflection of the differences in the length of the implementation periods: 4 months for Phase I and 7 months for Phase II. Classifications of educational recommendations more frequently fully implemented are educational facilities and materials as program resources (77%, 10/13); scheduling and attendance of educational programs (70% 12/17); implementation of patient or case centered education programs (72%, 26/36); and provision of house officer training (75%, 3/4).

Two classifications of education recommendations appear to have a substantially higher rejection rate: (82%, 14/17) regional interhospital collaboration for physician education program resources and nursing and allied health education recommendations (63%, 5/8). The other categories tend to cluster around the 30%-40% rejection rate.

ANALYSIS OF REPORTED HOSPITAL CHANGES AT EXPERIMENTAL AND CONTROL HOSPITALS

The second major analysis undertaken during Phase II was the determination of the differences in the nature and extent of reported changes between experimental and control hospitals. It will be recalled by the reader that this particular set of data pertains to hospital-initiated changes of existing hospital organization or operational function occurring during a designated time period as reported by various hospital personnel to behavioral scientist interviewers. (Refer to pp. 116-117 for a more complete discussion.)

Inspection of Table 25 permits the reader to view frequency of change data, both for experimental and control hospitals, distributed according to "degree" of change, that is, changes which were fully operational (op, category D) initiated but not yet completely operational (in, Category C & B) contemplated or tentative (co, Category A), and which manifested a behavioral change (be). The table presents the frequency and degree of overall, educational and non-educational changes.*

Inferential analyses (t tests) were applied to the data in the total columns of each of the three classifications: overall, educational and non-educational, to determine the significance of difference between the experimental and control hospitals. Results of the analyses are presented in Table 26, p. 144 indicating that education is the only area in which the experimental hospitals exhibited more change than control hospitals to a statistically significant extent ($t=1.97$, $p<.05$). In the overall and non-educational areas, there were no significant differences between the two groups of hospitals.

Consultation specifically tried to effect change in the area of physician education. To rule out the possibility that significant results were attributable to activity in other education areas such as nursing, total educational changes were divided into sub-groups and examined to see if change had occurred in the area the consultants tried to primarily influence. A statistically significant difference appeared only in the physician education area ($t=2.49$, $p<.05$). Table 27, p. 145 presents the results of the analyses.

Physician education changes were content analyzed into three reference areas roughly parallel to the classification of recommendations scheme, with the addition of one major area - physician education-related behavior. Table 28, p. 146 presents a content analysis of general categories of physician education changes. (A more detailed breakdown is presented in Appendix L, pp. L-2a-d.) The most frequently reported physician education changes at experimental and control hospitals are listed in Table 29, p. 147. For the most part, experimental hospitals showed proportionately greater incidence of change than controls in those areas consistent with the

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*Educational and non-educational changes were further classified by hospital functions, that is, personnel, equipment, physical plant, specialty areas, and community. Appendix L, pp. L-1a-b presents the frequencies of changes within each of these categories by degree of change.

TABLE 25

FREQUENCY AND DEGREE OF TOTAL, EDUCATIONAL AND NON-EDUCATIONAL CHANGES AT EXPERIMENTAL AND CONTROL HOSPITALS
PHASE II

	NUMBER OF OVERALL CHANGES					NUMBER OF EDUCATIONAL CHANGES					NUMBER OF NON EDUCATIONAL CHANGES				
	Total (1)	Op. (2)	Ino. (3)	Co. (4)	Be. (5)	Total (6)	Op. (7)	Ino. (8)	Co. (9)	Be. (10)	Total (11)	Op. (12)	Ino. (13)	Co. (14)	Be. (15)
EXPERIMENTAL HOSPITALS N = 42	2829 X = 67.36 S.D. = 30.84	1933	609	170	117	811 X = 19.31 S.D. = 11.25	530	126	42	113	2018 X = 48.05 S.D. = 23.17	1403	483	128	4
CONTROL HOSPITALS N= 39	2290 X = 58.72 S.D. = 26.66	1638	469	130	53	577 X = 14.79 S.D. = 9.43	417	78	32	50	1713 X = 43.92 S.D. = 19.31	1221	391	98	3

KEY

Op. = operational (D)
Ino. = initially operational (C+B)
Co. = contemplated (A)
Be. = behavioral changes

Table 26

PHASE II

COMPARISON OF REPORTED CHANGES: EXPERIMENTAL & CONTROL HOSPITALS

	TOTAL CHANGES		
	$\bar{X}$	S.D.	t
Exp.	67.36	30.84	1.32
Cont.	58.72	26.66	

	ED. CHANGES			NON-ED. CHANGES		
	$\bar{X}$	S.D.	t	$\bar{X}$	S.D.	t
Exp.	19.31	11.25	1.97●	48.05	23.17	.85
Cont.	14.79	9.43		43.92	19.31	

● = $p < .05$

T e :

FREQUENCY, MEAN & SIGNIFICANCE OF DIFFERENCE (t test) OF PHASE II EDUCATION CHANGES BETWEEN EXPERIMENTAL AND CONTROL HOSPITALS

		EXP.	CONTROL
Physician Education Changes	No. of changes	339	202
	Mean	8.07	5.18
	S.D.	5.44	4.87
	N	42	39
	t	2.49*	
Nursing Education Changes	No. of changes	249	192
	Mean	5.93	4.92
	S.D.	3.95	3.51
	N	42	39
	t	1.21	
Allied Health & Other Education Changes	No. of changes	223	183
	Mean	5.31	4.69
	S.D.	4.58	5.06
	N	42	39
	t	.57	

* $P < .05$

Table 28

Content Analysis of Phase II Physician Education Changes

	Experi-mental	Control
A. Resources	((137))	((86))
1. Fiscal support including hospital, staff and other sources	19	7
2. Educational facilities, equipment and materials including audio-visual aids and library	59	49
3. Hospital Personnel including DME, pathologist, secretaries and librarian	19	11
4. Outside resources including educational agencies visiting consultants and outside speakers	40	19
B. Planning and Design	((41))	((17))
1. Program design and assessment including evaluation of programs, recommendations, staff needs and interests, and community needs; specification of educational goals; structuring of activities and rotating responsibility among staff for educational planning and implementation; reorganization of committees	32	12
2. Educational program scheduling and attendance, including preparation and publicity of programs, and keeping attendance and minutes of meetings	9	5
C. Programming	((122))	((82))
1. Patient or case centered activities including grand rounds, CPC's case presentations, and case literature review	43	28
2. Educational use of routine hospital meetings including business and committee meetings	10	5
3. Content centered programs including lecture programs, discussion groups and specialty care area education programs, e.g., ICU, inhalation therapy	18	15
4. Joint physician-nurse educational activities including joint conferences, education programs built around specialty care	5	5
5. Miscellaneous training including self assessment test and postgraduate training at centers or other hospitals	11	10
6. Interhospital sharing of educational activities and teaching personnel	6	2
7. House officer training including resident and intern, guest resident, and extern	29	17
D. Behavior related to Physician Education	((39))	((17))
1. Alteration of attendance at hospitals and professional meetings	25	10
2. Alteration of attitudes or outlooks, including increased discussion and willingness to teach	14	7
Subtotal A. Resources	137	86
B. Planning and Design	41	17
C. Programming	122	82
D. Behavior related to Physician Education	39	17
Total	339	202

Table 29

PHASE II
MOST FREQUENT REPORTED
PHYSICIAN EDUCATION CHANGES

Experimental		Control
33	Use of audio-visuals	29
26	Library development	20
25	Increase attend. at hosp/prof. mtg.	10
24	Estab. of case presentations	14
23	Use of guest educators	10
21	Develop. of intern/resident pgm.	9
17	Use of outside resources for program development	9
14	Increase staff teach./discussion	7
13	Restructure of ed. program	4
11	Estab. of DME position	6
11	Increase participation in extra-hospital ed. activities	10

consultation's program development philosophy, such as establishment of case presentations, use of guest educators, teaching by local staff members and establishment of the position of DME.

Comparison of Hospital Attributes of Experimental and Control Hospitals

In order to determine whether the statistically significant difference in change was due to impact of consultation, it was necessary to determine whether experimental and control hospitals differed initially (pre Phase II consultation), on any of the hospital or medical staff characteristics.

The following tables and ensuing discussion deal with a comparative analysis of the attributes for the two groups of hospitals. The entire discussion is an attempt to answer the question: Do any initial differences exist between the two groups of hospitals? Are the groups essentially similar and comparable or are they very different?

Comparison of Hospital Attributes of Experimental and Control Hospitals Pre Phase II Consultation

Examination of Table 30 reveals the frequency, proportion and significance of difference between experimental and control hospitals in relation to the availability of facilities, personnel, and services, e.g., intensive care units, coronary care units, dental facilities, physical therapy departments. It is interesting to note that out of 17 instances of services or facilities, experimental and control hospitals differ only in regard to the frequency of reporting the existence of a physical therapy department ($t=2.15$, $p<.05$) and a social work department ($t=2.25$, $p<.05$). In the case of both classes of facilities, experimental hospitals report their availability more frequently than the control institutions. The essential interpretation to be made from examination of this table is to underscore the likely equivalence of the two groups of hospitals in regard to the existence of most kinds of service facilities and resources.

Table 31 describes a series of attributes or characteristics of both control and experimental hospitals relating to continuing education (e.g., existence of a hospital-salaried DME, existence of an education committee). It should be noted that in some 25 instances of comparison,

Table 30

COMPARISON (t TEST) OF EXPERIMENTAL AND CONTROL HOSPITALS ON HOSPITAL CHARACTERISTICS YIELDING DISCONTINUOUS (DISCRETE) DATA

Hospital Characteristic	Experimental				Control				t Value (significance of difference between proportions)
	Yes	N-Cases	p	Sp	Yes	N-Cases	p	Sp	
Existing Facilities and Services									
ICU	22	38	.58	.08	19	37	.51	.08	.61
CCU	19	38	.50	.08	19	37	.51	.08	.09
Organized Emergency Care Department	31	33	.94	.04	33	36	.92	.05	.32
Organized Outpatient Department	23	37	.62	.08	17	37	.46	.08	1.38
Electroencephalography	11	37	.30	.07	12	36	.33	.08	.28
Home Care Program	7	38	.18	.06	9	37	.24	.07	.64
Progressive Patient Care Service	4	26	.15	.07	3	29	.10	.06	.56
Post-operative Recovery Room	36	38	.95	.04	31	37	.84	.06	1.56
Inhalation Therapy Department	24	38	.63	.08	20	36	.56	.08	.61
Pathology Lab (w/pathologist)	33	38	.87	.05	28	37	.76	.07	1.22
Dental Facilities	15	32	.47	.09	15	36	.42	.08	±
Pharmacy (w/registered pharamacist)	33	37	.89	.05	30	37	.81	.06	±
Physical Therapy Dept.	32	38	.84	.06	23	37	.62	.08	2.15**
Premature Nursery	23	36	.64	.08	22	35	.63	.08	±
Psychiatric In-Patient Unit	4	36	.11	.05	1	36	.03	.03	1.33
Rehabilitation In-patient Unit	7	36	.19	.07	2	36	.06	.04	1.68*
Social Work Dept.	20	36	.56	.08	11	37	.30	.07	2.25**
Administrator Characteristic									
Formal Degree in Hospital Administration	11	38	.29	.07	10	36	.28	.08	.11
Participation in Continuing Education Programs within Past Yr. Relative to Role as Hospital Administrator	30	37	.81	.06	25	33	.76	.07	.54

* $P \leq .10$

** $P \leq .05$

± Scrutiny of the data indicated that there was no relationship between the dependent and independent variables. Therefore, a statistical computation (x^2) was not performed.

Table 31

COMPARISON (t TEST) OF EXPERIMENTAL AND CONTROL HOSPITALS ON HOSPITAL CHARACTERISTICS YIELDING DISCONTINUOUS (DISCRETE) DATA

	Experimental				Control				
Hospital Characteristic	Yes	N-Cases	p	Sp	Yes	N-Cases	p	Sp	t Value
Existence of Arrangements for Continuing Education									
Hosp.-salaried Dir. of Medical Education	9	36	.25	.07	4	37	.11	.05	1.56
Education Committee	25	37	.68	.08	19	37	.51	.08	1.49
Committee or Director of Hosp.-wide Ed. & Training Program	9	38	.24	.07	5	34	.15	.06	±
Solicitation of Assistance from N.L., Med. Schools in Development or Implementation of Phys. Ed. Programs	4	34	.12	.05	2	33	.06	.04	.85
Existence of Formal Education Programs									
Approved Med. School Affiliation	4	38	.11	.05	2	37	.05	.04	±
Residency & Internship Program	9	38	.24	.07	6	37	.16	.06	±
Intern or Summer Student Programs	13	32	.41	.09	6	32	.19	.07	1.91*
Professional Nursing School	10	38	.26	.07	8	37	.22	.07	±
Affiliated Nursing Students	11	30	.37	.09	9	34	.26	.08	.95
Explicit Orientation & Education Program for Trustees	14	36	.39	.08	6	36	.17	.06	2.10**
Interhospital Education Programs (collaboration in planning or execution with another hospital)- Physician	11	36	.31	.08	12	31	.39	.09	.68
Nursing	26	36	.72	.08	25	33	.76	.08	.33
Allied Health	13	32	.41	.09	16	31	.52	.09	.87
Existence of Committees									
Utilization	38	38	1.00	±	36	36	1.00	±	±
Internal Medical Audit	21	36	.58	.08	19	37	.51	.08	±
External Medical Audit, i.e., PAS—MAP	13	38	.34	.08	10	37	.27	.07	±
Functioning Trustee-Medical Staff-Administration Committee	32	38	.84	.06	35	38	.92	.04	1.07
Use of Extramural Consultants									
Nursing	20	35	.57	.08	14	34	.41	.08	1.33
Hospital Administration	13	36	.36	.08	8	30	.27	.08	±
Allied Health	7	33	.21	.07	7	31	.23	.07	±
Physician	21	35	.60	.08	12	33	.36	.08	1.99**

*P ≤.10

**P ≤.05

± Scrutiny of the data indicated that there was no relationship between the dependent and independent variables. Therefore, a statistical computation (x^2) was not performed.

only two instances in which a significant difference appear are in regard to the provision of orientation and education programs for hospital trustees (t=2.10, $p < .05$) and the use of extramural consultants by physicians (t=1.99, $p < .05$). In this regard, experimental hospitals have a much more frequent utilization of training programs and outside consultants in contrast to the control hospitals. Again, the essential implication of the body of data is to underscore the comparability of hospitals in the experimental and control groups respectively. It is of incidental notice that the existence of hospital salaried DME's is relatively small (9 and 4 in the experimental and control groups respectively). Similarly, the existence of a committee or Director of Hospital-Wide Education and Training is a quite infrequent device for the administrative supervision of in-house education. Similarly, it should be noted that both the experimental and control hospital groups are unlikely to have approved medical school affiliations, to have residency and internship programs, extern or summer school programs, etc. In a similar vein, the relatively infrequent existence of an external medical audit is noteworthy as is the extremely low frequency of the utilization of extramural consultants in regard to allied health programs.

Examination of Table 32 again reporting additional dimensions of hospital attributes for the two groups of hospitals, reveals essentially equivalent entries for the two groups of hospitals in regard to the number of beds, ratio of active staff to beds, aggregate mileage index reflecting distance from medical schools, total budget percentage allocated to physician education in contrast to allied health education, turnover rate of staff, etc. Again it is noteworthy to acknowledge the fact that experimental and control hospitals show no apparent statistically significant differences in attributes.

Comparability of Medical Staff Characteristics Between Experimental and Control Hospitals

Examination of Table 33, P.153 permits one to compare the attributes of the medical staff along a number of dimensions between experimental and control hospitals. Results of the analysis indicate that there are no statistically significant differences between the two groups of hospitals in regard to such attributes as size of active medical

Table 32

COMPARISON (t TEST) OF EXPERIMENTAL AND CONTROL HOSPITALS ON HOSPITAL CHARACTERISTICS YIELDING CONTINUOUS DATA

Hospital Characteristic	Experimental			Control			t Value (significance of difference between X's)
	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N	
Number of Beds	137.84	89.33	38	117.32	91.54	37	.97
Ratio of Active Staff to Beds	.28	.15	38	.28	.45	36	.12
Total Miles fr. Med. Schls.	595.97	325.28	37	664.00	380.88	34	.80
Total Budget (1967-68)	2527.63	2112.27	16	2314.67	1927.92	18	.30
% Budget for Physician Ed.	.36%	.47	24	.35%	.77	20	.06
% Budget for Allied Health Education	1.15%	1.72	22	1.35%	2.18	16	.32
Turnover Rates (%) Medical Staff	3.31%	6.25	31	3.26%	5.34	26	.03
Nursing Staff	21.54%	16.84	26	15.21%	9.42	23	1.56
Board of Trustees	7.06%	16.18	31	7.41%	8.27	29	.10
Administrator Characteristics Age	49.14	9.04	37	48.65	9.82	34	.22
Years in Administration	15.61	8.45.	37	14.97	7.83	32	.32
Years in Current Position	8.38	7.28	38	8.20	6.99	35	.11
Director of Nursing Characteristics Age	48.86	8.59	28	46.46	8.76	28	1.02
Years in Administration	12.02	8.32	29	9.48	7.61	30	1.20
Years in Current Position	6.54	6.08	31	5.37	5.57	31	.78

Table 33

COMPARISON (t TEST) OF EXPERIMENTAL AND CONTROL HOSPITALS ON MEDICAL STAFF CHARACTERISTICS YIELDING CONTINUOUS DATA

Medical Staff Characteristic	Experimental			Control			t Value
	$\overline{X}$	S.D.	N	$\overline{X}$	S.D.	N	(Significance of difference between $\overline{X}$'s)
Courtesy Staff Characteristics							
Size of Courtesy Medical Staff (#)	21.8	28.7	32	20.78	23.3	36	.16
Active Staff Characteristics							
Size of Active Medical Staff (#)	42.62	54.5	34	31.08	27.5	37	1.12
Mean age of staff	48	5.7	35	47.96	4.3	36	.03
Staff w/other hospital affiliation (%)	50.48	34.6	31	53.57	38.9	32	.33
General Practitioners on Active Staff (%)	37.3	21.1	30	48.28	24.3	30	1.83*
Board Certified (%)	35.8	21.4	32	33.56	19.7	35	.44
Membership in Natl. Honorary Academy (%)	46.	28.3	27	44.54	28	29	.19
Willingness to attend teaching sessions (%)	80.5	19.2	33	75.96	28.3	26	.72
Willingness to Instruct (%)	59.6	29	32	54.05	31.9	26	.68
Willingness to use own patients in education programs (%)	81.4	21.6	28	71.96	33.8	24	1.19
Willingness to be taught by own hospital staff (%)	75.5	30.1	31	68.15	33.5	19	.79
Director of Medical Ed. Characteristics							
Age	47.14	13.20	28	50.6	12.62	5	.53
Length of Service in Current Position	2.8	3.6	25	2.33	1.4	6	.32
Chief of Medicine Characteristics							
Age	51.7	7.5	24	47.4	7.6	18	1.75*
Length of Service in Current position	5.77	4.57	23	8.26	7.48	19	1.29
Chief of Surgery Characteristics							
Age	49.2	6.85	25	50.11	7.77	19	.40
Length of Service in Current Position	4.96	4.14	25	5.62	5.88	18	.42

* $P \leq .10$

staff, mean age of staff, number of board certified members of staff, membership in national honorary academies, and interestingly enough, the reported willingness on the part of staff to attend and/or instruct teaching sessions. Examination of Table 34 permits one to compare quickly the existence of full time radiologists, pathologists, chiefs of medicine and surgery, and/or directors of medical education. It is interesting to note that the only item that approximates a statistically significant difference between control and experimental hospitals is the item of participation of the DME in continuing medical education programs in the past year ($t=2.29$, $p<.05$).

ANALYSIS OF FACTORS INHIBITING OR FACILITATING THE IMPACT OF CONSULTATION

Having demonstrated the lack of divergence between many characteristics of the two groups (experimental and control hospitals), it is tenable to assume that the hospitals tend to be similar to begin with, and an investigation dealing with the effect of a characteristic on change measures will have comparable effect (be due to consultation rather than the nature of the hospital), since, it can be assumed, we are comparing the effect of two similar things.

In accordance with the corollary research objective of the present investigation, that is, determination of factors facilitating and/or inhibiting the impact of consultation, the research question posed was of the following nature: What is the effect of the presence of selected hospital, medical staff, and consultant characteristics on various dependent change measures (that is, hospital changes and recommendation implementation rates).

Table 34

COMPARISON (t TEST) OF EXPERIMENTAL AND CONTROL HOSPITALS ON MEDICAL STAFF CHARACTERISTICS YIELDING DISCONTINUOUS (DISCRETE) DATA

Medical Staff Characteristics	Experimental				Control				t Value (significance of difference between proportions)
	Yes	N-CASES	p	Sp	Yes	N-CASES	p	Sp	
Radiologist									
presence of	34	35	.97	.03	37	37	1	0	1.01
full vs. part-time	22	34	.65	.08	20	37	.54	.08	.91
Pathologist									
presence of	32	34	.94	.04	34	37	.92	.04	.37
full vs. part-time	20	32	.63	.09	17	34	.50	.09	1.02
Chief of Medicine									
presence of	17	35	.49	.08	15	36	.42	.08	.58
full vs. part-time	4	17	.24	.10	6	15	.40	.13	1.00
Chief of Surgery									
presence of	18	35	.51	.08	15	36	.42	.08	.83
full vs. part-time	5	18	.28	.11	5	15	.33	.12	.35
Pharmacist									
presence of	32	35	.91	.05	34	37	.92	.04	.07
full vs. part-time	20	32	.63	.09	18	34	.53	.09	.79
Director of Med. Ed.									
presence of									
full vs. part-time	6	25	.24	.09	2	7	.29	.17	.25
Participation by DME in cont. ed. programs in past year	22	25	.88	.06	4	8	.5	.18	2.29**

** $P \leq .05$

Analysis followed a format similar to that of Phase I, however with modification and reworking of both data collection and analysis. A more thorough and extensive analysis of possible facilitating and inhibiting factors was undertaken during Phase II and will be presented in the present section.

The reader will recall that Phase I analysis called for utilization of the following dependent measures: 1) full implementation of recommendation rates; and 2) full plus partial implementation of recommendation rates. Time was not sufficient to use a third dependent measure, that is, the number of reported education changes. Elaborating on Phase I, Phase II research yielded a wealth of dependent measures, due to both the indepth reporting of hospital change data and the additional collection of data pertinent to the implementation status of Phase I recommendations after 18 months.

Change measures yielded for Phase II were as follows:

1. Recommendation Data (total, educational, non-educational)
   - a. Phase II recommendations:
     - Fully implemented (I)
     - Partially implemented (P)
     - Fully plus partially implemented (IPI)
     - Rejected (R)
   - b. Phase I recommendations after 18 months
     - Fully implemented (I)
     - Partially implemented (P)
     - Fully plus partially implemented (IPI)
     - Rejected (R)
2. Hospital Change Data
   - a. Areas of change:
     - Total changes
     - Education changes
       - Physician
       - Nursing
       - Allied health and others
     - Non-education changes
   - b. Degree of change:
     - Operational (Op)

Initiated but not yet complete (Ino)
Contemplated (Co)
Behavioral (Be)

Since it would have proved unfeasible, impractical and time consuming to utilize every dependent measure in inferential analysis, the project staff was beset with the task of determining which measures to select. An intercorrelation matrix (Pearson r correlation coefficient) was computed for ALL Phase I and Phase II measures (52 variables yielding 1479 correlations). The major correlations are presented in Tables 35, 36, 37, and 38. The following variables were selected to be utilized to test the relationship of the occurrence of change to various independent variables:

1. Phase II full implementation plus partial implementation of recommendations (heretofore referred to as Phase II IPI.)
2. Phase I full implementation plus partial implementation of recommendations at the end of 18 months (Phase delayed IPI)
3. Phase II reported hospital education changes (not broken down by degree of change)

Variables in items 1. and 2. were broken into frequency of combined implementation (number) and proportion of frequency of combined implementation to total number of recommendations submitted to the hospitals (percent). The variable in item 3. was broken into frequency of occurrence (number) and proportion of number of education changes to total number of changes (percent). A variety of tests were used, X^2, r, ANOVA, depending on the nature of the data and the question being answered.

The Interrelationship of Selected Hospital Characteristics and Occurrence of Change

Efforts at ascertaining the possible interaction effect of selected attributes of hospitals and three classes of dependent measures, i.e., number and percent of partial and completely implemented recommendations at the end of

Table 35

INTERCORRELATION OF PHASE I (PEARSON r) HOSPITAL CHANGE MEASURES WITH PHASE II HOSPITAL CHANGE MEASURES

	PHASE II HOSPITAL CHANGES		
PHASE I HOSPITAL CHANGES	Total	Educational	Non-Educational
Total	.37**	.34**	.33**
Educational	.36**	.39**	.29**
Non-educational	.26**	.20	.26**

* $P < .05$
** $P < .01$

Table 36

INTERCORERRELATION (PEARSON r) OF PHASE II HOSPITAL CHANGE MEASURES WITH IMPLEMENTATION OF PHASE II RECOMMENDATIONS

PHASE II HOSPITAL CHANGES	PHASE II RECOMMENDATIONS Complete (I)	Partial (P)	Combined (IPI)	Rejected (R)
Total	.19	-.04	.17	-.36*
Educational	.24	-.001	.22	-.40*
Physician Educational	.37*	.11	.37*	-.35*
Non-Educational	.14	-.05	.12	-.29

$*P < .05$
$**P < .01$

Table 37

INTERCORRELATION (PEARSON r) OF IMPLEMENTATION OF PHASE II RECOMMENDATIONS WITH IMPLEMENTATION OF PHASE I RECOMMENDATIONS AT THE END OF 18 MONTHS

PHASE I RECOMMENDATIONS AFTER 18 MONTHS	PHASE II RECOMMENDATIONS			
	Complete (I)	Partial (P)	Combined (IPI)	Rejected (R)
Complete (I)	.38*	.18	.39*	-.07
Partial (P)	.29	-.29	.21	.09
Combined (IPI)	.41*	.08	.40*	-.07
Rejected (R)	-.33*	-.24	-.35*	.34*

*P $<$ .05
**P $<$ .01

Table 38

INTERCORRELATION (PEARSON r) OF IMPLEMENTATION OF PHASE I RECOMMENDATIONS AT THE END OF 4 MONTHS WITH IMPLEMENTATION OF PHASE I RECOMMENDATIONS AT THE END OF 18 MONTHS

	PHASE I RECOMMENDATIONS AFTER 18 MONTHS			
	Complete	Partial	Combined	Rejected
PHASE I RECOMMENDATIONS AFTER 4 MONTHS	(I)	(P)	(IPI)	(R)
Complete (I)	.47**	.20	.48**	.20
Partial (P)	.34*	.23	.38**	-.14
Combined (IPI)	.55**	.27	.57**	.11
Rejected (R)	.23	.14	.28	.73**

*P $<$ .05
**P $<$ .01

Phase II and the number and percent of changes reported having occurred in the hospital pertinent to education, may be examined in Table 39. Medians were determined for each of the three dependent variables and X^2's were computed for the hospital characteristics yielding discontinuous data according to whether the dependent variable fell above or below the median. It is important to note that a substantial number of attributes do not relate to the dependent measures used in the current study, e.g., the presence of a large number of special services and facilities such as an outpatient department, electroencephalography, a progressive patient care program, an inhalation therapy department, a dental facility, a pharmacy, a physical therapy department, a premature nursery, a psychiatric in-patient unit and a rehabilitation in-patient unit. Similarly, the existence of an interhospital physician or allied health education programs do not seem to be associated with differential implementation of recommendations or occurrence of hospital education changes.

Findings bordering on statistical significance and findings reaching statistical significance tend to suggest that the presence of an intensive care unit and primary care unit, the presence of a hospital-salaried DME, the presence of an education committee, the existence of a committee or director of hospital-wide education and training programs, the existence of a pathology lab and the presence of a social work department seem to be associated with differential implementation of recommendations or the occurrence of education change. Another way of stating this is that other things being equal, hospitals, selected to the attributes such as those listed immediately above, would be more likely to benefit from education consultation programs such as described by the current project than hospitals which do not have such attributes.

Examination of Table 40 reveals an additional effort to explore the relationship between selected independent variables, e.g., attributes of the hospital and/or its selected members of its supervisory staff and the three dependent measures: number and percent of partial and completely implemented Phase II recommendations, number and percent of partial and completely implemented Phase I recommendations at the end of 18 months, and the number and

Table 39

RELATIONSHIP (X^2) OF HOSPITAL EDUCATION CHANGES AND RECOMMENDATIONS TO PRESENCE OF HOSPITAL CHARACTERISTICS YIELDING DISCONTINUOUS (DISCRETE) DATA IN EXPERIMENTAL HOSPITALS

Independent Variable	Dependent Variables					
Hospital Characteristic	Phase II IPI		Phase I Delayed IPI		Hosp. Ed. Changes	
	Number	Percent	Number	Percent	Number	Percent
Existing Facilities & Services						
ICU	1.03	1.78	4.23**	4.26**	.87	.43
CCU	3.31*	.90	.04	1.63	3.80**	.11
Org. Outpatient Dept.	.29	.00	.43	.43	2.31	.00
Electroencephalography	±	±	±		±	±
Home Care Program	.01	.59	±	±	2.30	2.80*
Progressive Patient Care	±	±	±	±	±	±
Post-Operative Recovery Room	±±	±±	±±	±±	±±	±±
Inhalation Therapy Dept.	.46	.91	1.46	.61	±	±
Pathology Lab (w/pathologist)	.00	.00	3.49*	1.43	±±	±±
Dental Facilities	±	±	±	±	±	±
Pharmacy (w/registered pharmacist)	±	±	±	±	±	±
Physical Therapy Dept.	.13	.13	±	±	±±	±±
Premature Nursery	±	±	±	±	±	±
Psychiatric In-patient Unit	±	±	±	±	±	±
Rehabilitation In-patient Unit	.09	.09	.81	.06	.03	.71
Social Work Dept.	±±	±±	±	3.95**	±±	±±
Utilization Committee	±±	±±	±±	±±	±±	±±
Internal Medical Audit	±±	±±	±±	±±	±±	±±
External Medical Audit, i.e., PAS-MAP	.27	1.08	.24	.55	.63	.33
Use of Extramural Consultants						
Nursing	±±	±±	±±	±±	±±	±±
Hospital Administration	±±	±±	±±	±±	±±	±±
Allied Health	±±	±±	±±	±±	±±	±±
Physician	.01	2.52	2.42	.88	.69	1.54
Administrator Characteristics						
Formal Degree in Hosp. Admin.	1.19	1.85	.08	.51	.01	.00
Participation in Continuing Education Programs within Past Year Relative to Role as Hospital Administrator	±	±	.58	.07	.01	.01

* $p \leq .10$

** $p \leq .05$

*** $p \leq .01$

± Scrutiny of the data indicated that there was no relationship between the independent and dependent variables. Therefore, a statistical computation (X^2) was not performed.

±± Data was insufficient to perform computation (X^2).

CONTINUATION OF TABLE 39

RELATIONSHIP (X^2) OF HOSPITAL EDUCATION CHANGES AND RECOMMENDATIONS TO PRESENCE OF HOSPITAL CHARACTERISTICS YIELDING DISCONTINUOUS (DISCRETE) DATA IN EXPERIMENTAL HOSPITALS

Independent Variable	Dependent Variable					
Hospital Characteristic	Phase II IPI		Phase I Delayed IPI		Hospital Ed. Change	
	Number	Percent	Number	Percent	Number	Percent
Arrangements for Continuing Education						
Presence of Hospital-salaried Director of Medical Education	2.89*	2.89*	.27	.09	1.35	.04
Existing Education Committee	1.19	1.76	5.93**	4.62**	3.98**	1.67
Functioning Trustee-Med. Staff-Adm. Committee	±±	±±	.24	.55	.09	1.78
Committee or Director of Hospital-wide Education & Training Program	3.13*	2.24	.25	3.04*	4.46**	9.32***
Solicitation of Assistance from N.E. Med. Schls. in Development or Implementation of Physician Education Programs	±±	±±	±±	±±	±±	±±
Existence of Formal Education Programs						
Approved Medical School Affiliation	±±	±±	±±	±±	±±	±±
Residency & Internship Program	2.05	.31	.25	.86	2.33	.00
Extern or Summer Student Program	±	±	±	±	±	±
Professional Nursing School	.11	.31	.01	.21	.03	.54
Affiliate Nursing Students	±	±	±	±	±	±
Explicit Orientation & Education Program for trustees	.02	2.28	1.52	2.20	.15	3.05*
Interhospital Education Programs (collaboration in planning or execution with another hospital)						
Physician Education	.33	1.47	.14	1.89	.25	.52
Nursing Education	.87	2.73*	.00	1.66	.62	.03
Allied Health Education	2.29	1.17	1.22	.62	.43	.00

* $P \leq .10$

** $P \leq .05$

*** $P \leq .01$

± Scrutiny of the data indicated that there was no relationship between the independent and dependent variables. Therefore, a statistical computation (x^2) was not performed.

±± Data was insufficient to perform computation (x^2).

percent of changes reported as taking place in the hospital pertaining to education. A Pearson r correlation coefficient was used to determine the correlation between the independent and dependent variables. A number of hospital characteristics significantly correlated with the three dependent variables, e.g., a positive correlation between the number of beds and the number of Phase I recommendations implemented as well as with the number of reported hospital education changes. A negative correlation was yielded for number of beds and percent of hospital education changes. This may seem paradoxical in light of the positive correlation with number of education changes. However, no relationship necessarily exists between number and percent of changes as number is the total number of education changes occurring and percent is the proportion of educational changes to totalchanges occurring. Other significant negative correlations were: number and percent of Phase II recommendations and total miles hospitals were located away from medical schools, indicating that the closer to medical schools the higher the implementation rate; medical staff turnover rates and percent of education changes; nursing staff turnover rates and Phase II implementation of recommendations; age of administrator and number of hospital education changes; and administrative experience of director of nursing and percent of Phase II recommendations implemented. Positive correlations included percent of budget allocated to physician education and number of education changes; percent of budget allocated to allied health education and number of education changes; and age of director of nursing and percent of education changes.

The significant correlations mentioned above should not be interpreted as more than perhaps suggested findings. However, extremely cautious interpretations of these significant correlations would suggest the following:

1. Other things being equal, select hospitals of larger number of beds as potential candidates for being responsive to an educational consultation;

2. Select hospitals which are closer to medical centers as potential responsive candidates for educational consultation;

Table 40

RELATIONSHIP (CORRELATION - PEARSON r) OF HOSPITAL EDUCATION CHANGES AND RECOMMENDATIONS TO HOSPITAL CHARACTERISTICS YIELDING CONTINUOUS DATA IN EXPERIMENTAL HOSPITALS

Independent Variable	Dependent Variables					
Hospital Characteristic	Phase II IPI		Phase I Delayed IPI		Hosp. Ed. Change	
	#	%	#	%	#	%
Number of Beds	r = +.13 n = 27	r = +.02 n = 27	r = +.36** n = 33	r = +.19 n = 33	r = +.33** n = 38	r = -.84*** n = 38
Ratio of Active Staff to Number of Beds	r = +.20 n = 27	r = +.18 n = 27	r = +.21 n = 33	r = +.18 n = 33	r = +.19 n = 38	r = +.09 n = 38
Total Miles from Medical Schools	r = -.41** n = 26	r = -.61*** n = 26	r = +.02 n = 33	r = -.21 n = 33	r = +.14 n = 37	r = +.21 n = 37
Total Budget (1967-68)						
% Budget f/Physician Education	r = -.28 n = 16	r = +.27 n = 16	r = +.16 n = 20	r = +.01 n = 20	r = +.68*** n = 24	r = +.34 n = 24
% Budget f/Allied Health Education	r = -.11 n = 15	r = +.13 n = 15	r = +.34 n = 18	r = +.04 n = 18	r = +.55*** n = 22	r = +.12 n = 22
Turnover Rates (%)						
Medical Staff	r = .00 n = 21	r = +.03 n = 21	r = -.19 n = 28	r = -.18 n = 28	r = -.28 n = 31	r = -.44** n = 31
Nursing Staff	r = -.50** n = 19	r = ,00 n = 19	r = +.28 n = 22	r = +.23 n = 22	r = +.07 n = 26	r = +.12 n = 26
Board of Trustees	r = +.32 n = 22	r = +.04 n = 22	r = .15 n = 26	r = +.23 n = 26	r = -.05 n = 31	r = +.11 n = 31
Administrator Characteristics						
Age	r = -.07 n = 27	r = +.13 n = 27	r = +.02 n = 32	r = +.22 n = 32	r = -.38** n = 37	r = -.26 n = 37
Years in Administration	r = -.12 n = 26	r = -.09 n = 26	r = -.07 n = 32	r = -.06 n = 32	r = -.16 n = 37	r = -.24 n = 37
Years in Current Position	r = +.03 n = 27	r = -.02 n = 27	r = +.18 n = 33	r = +.15 n = 33	r = +.06 n = 38	r = +.04 n = 38
Director of Nursing Characteristics						
Age	r = -.27 n = 21	r = -.33 n = 21	r = +.15 n = 24	r = +.01 n = 24	r = +.21 n = 30	r = +.31* n = 30
Years in Administration	r = +.09 n = 22	r = -.39* n = 22	r = +.11 n = 24	r = -.11 n = 24	r = +.11 n = 29	r = +.02 n = 29
Years in Current Position	r = +.18 n = 23	r = -.15 n = 23	r = +.13 n = 26	r = -.23 n = 26	r = +.09 n = 31	r = -.07 n = 31

* P ≤ .10
** P ≤ .05
*** P ≤ .01

3. Select hospitals which allocate a greater per cent of their budgets for physician and allied health education;

4. Select hospitals with lower turnover rates of nursing and physician staffs as potentially responsive candidates for education consultation.

5. Do not be concerned with the ratio of active staff to number of beds; the number of years the administrator has been in his current position or years in hospital administration; nor the number of years the director of nursing has been in her current position.

Interrelationship of Selected Medical Staff Characteristics and Occurrence of Change

In an effort to ascertain an answer to the question, "Is the existence of certain medical staff characteristics, e.g., size and composition of active medical staff, or the presence of a director of medical educationorchief of service associated with the increased occurrence of education change and/or implementation of recommendations?", a series of analyses were undertaken, i.e., significance of Pearson r's or x^2's between presence or absence of the implicated professional medical staff and/or one of the three classes of dependent measures - number and percent of partial and completely implemented recommendations, and number and percent of education changes reported having occurred in the hospital.

With reference to Table 41 , very few significant correlations were yielded between medical staff characteristics and the three dependent variables. Of note are the following significant correlations: size of active medical staff to number of hospital education changes indicating that the larger the size of the active medical staff the greater the number of education changes (r = +.31); the fewer percent of board certified on the active medical staff the greater the number of Phase II recommendations implemented (r = -.38); the greater percent of staff with membership in national honorary academies the greater the number of Phase II recommendations implemented (r = +.44); the willingness

Table 41

RELATIONSHIP (CORRELATION - PEARSON r) OF HOSPITAL EDUCATION CHANGES AND RECOMMENDATIONS TO MEDICAL STAFF CHARACTERISTICS YIELDING CONTINUOUS DATA IN EXPERIMENTAL HOSPITALS

Independent Variable	Dependent Variable					
	Phase II IPI		Phase I Delayed IPI		Hosp. Ed. Changes	
Active Staff Characteristics	#	%	#	%	#	%
Size of Active Medical Staff (#)	r = +.23 n = 22	r = +.19 n = 22	r = +.20 n = 30	r = +.15 n = 30	r = +.31* n = 34	r = .05 n = 34
Mean age of staff	r = +.28 n = 25	r = -.11 n = 25	r = -.16 n = 31	r = -.19 n = 31	r = -.05 n = 35	r = -.17 n = 35
Staff w/other hospital Affiliation (%)	r = .00 n = 21	r = +.13 n = 21	r = +.12 n = 28	r = +.28 n = 28	r = +.05 n = 31	r = +.19 n = 31
General Practitioners on Active Staff (%)	r = +.10 n = 23	r = +.05 n = 23	r = -.15 n = 26	r = -.28 n = 26	r = -.11 n = 30	r = +.01 n = 30
Board Certified (%)	r = -.38* n = 23	r = -.12 n = 23	r = +.04 n = 28	r = +.06 n = 28	r = +.24 n = 32	r = +.23 n = 32
Membership in Natl. Honorary Academy (%)	r = +.44** n = 18	r = +.28 n = 18	r = +.04 n = 24	r = +.06 n = 24	r = +.25 n = 27	r = +.24 n = 27
Willingness to attend teaching sessions (%)	r = -.21 n = 23	r = -.08 n = 23	r = -.02 n = 29	r = -.07 n = 29	r = -.10 n = 33	r = -.02 n = 33
Willingness to instruct (%)	r = -.46** n = 22	r = -.21 n = 22	r = -.10 n = 28	r = +.05 n = 28	r = -.03 n = 32	r = +.12 n = 32
Willingness to Use own Patients in Education Programs (%)	r = +.01 n = 19	r = -.09 n = 19	r = -.17 n = 24	r = -.11 n = 24	r = -.29 n = 28	r = -.29 n = 28
Willingness to Be Taught by own Hospital Staff (%)	r = -.70*** n = 21	r = -.26 n = 21	r = +.03 n = 27	r = +.18 n = 27	r = +.07 n = 31	r = +.16 n = 31
Staff & Other Hospital Affiliations	r = .00 n = 21	r = -.13 n = 21	r = -.12 n = 28	r = -.28 n = 28	r = +.05 n = 31	r = -.19 n = 31
Courtesy Staff Characteristics Size of Courtesy Medical Staff (#)	r = +.04 n = 23	r = +.01 n = 23	r = -.26 n = 28	r = -.19 n = 28	r = +.22 n = 32	r = -.06 n = 32
Characteristics of Medical Staff Roles						
Director of Medical Ed. Characteristics						
Age	r = +.03 n = 21	r = +.10 n = 21	r = -.15 n = 24	r = -.10 n = 24	r = +.46** n = 28	r = +.06 n = 28
Length of Service in Current Position	r = +.02 n = 20	r = +.21 n = 20	r = -.42 n = 21	r = -.23 n = 21	r = -.19 n = 25	r = -.40** n = 25
Chief of Medicine Characteristics						
Age	r = +.46** n = 17	r = -.02 n = 17	r = .00 n = 21	r = +.10 n = 21	r = .00 n = 24	r = +.05 n = 24
Length of Service in Current Position	r = +.11 n = 17	r = -.07 n = 17	r = -.23 n = 20	r = +.01 n = 20	r = -.18 n = 23	r = -.16 n = 23
Chief of Surgery Characteristics						
Age	r = +.02 n = 18	r = +.03 n = 18	r = +.15 n = 22	r = +.12 n = 22	r = +.14 n = 25	r = -.01 n = 25
Length of Service in Current Position	r = +.08 n = 18	r = -.07 n = 18	r = -.25 n = 22	r = -.18 n = 22	r = -.12 n = 25	r = -.34 n = 25

* $p \leq .10$
** $p \leq .05$
*** $p \leq .01$

of the medical staff to either participate as instructor in the hospital-based CME program or willingness to be taught by other members of the hospital medical staff, the fewer the number of Phase II recommendations implemented (r = -.46; r = -.70 respectively); the older the DME the greater the number of education changes (r = +.46); the longer the DME has been in his current position the smaller the percent of education changes; and the older the chief of medicine the greater the number of Phase II recommendations implemented. It is of interest to note that none of the medical staff characteristics correlated with percent of recommendations implemented.

Examination of Table 42 reveals that in general, the presence of radiologist, pathologist, chief of medicine, chief of surgery, are not associated with any unusual degree of implementation or recommendations and/or education changes. However, the presence of a full-time radiologist, pathologist and pharmacist each appears to be related in a statistically-significant way to one or more of the dependent measures.

The Interrelationship of Consultation Characteristics and Occurrence of Change

In an attempt to ascertain the relationship between various consultation characteristics and two change measures of Phase II continuing medical education growth (i.e. Phase II IPI and hospital education changes), a series of additional analyses were undertaken.

Phase II consultation characteristics represented a complete revision over Phase I characteristics utilized. Since present data collected was relevant to Phase II consultants only, use of "Phase I delayed" as a dependent measure was irrelevant to present analyses.

Phase II consultation characteristics dealt with two areas:

1. Consultation process characteristics

   Data distributed according to hospital:

   a. Number of training sessions attended by the DME.

Table 42

RELATIONSHIP (X^2) OF HOSPITAL EDUCATION CHANGES AND RECOMMENDATIONS TO PRESENCE OF MEDICAL STAFF CHARACTERISTICS YIELDING DICHOTOMOUS DATA IN EXPERIMENTAL HOSPITALS

Independent Variable	Dependent Variables					
	Phase II IPI		Phase I Delayed IPI		Hosp. Ed. Changes	
Medical Staff Characteristics	Number	Percent	Number	Percent	Number	Percent
Existing Staff Personnel						
Radiologist						
Presence of	±±	±±	±±	±±	±±	±±
Full time vs. part-time	.06	.50	.02	.02	2.74*	.13
Pathologist						
Presence of	±±	±±	±±	±±	±±	±±
Full time vs. part-time	±	.05	.36	.83	5.7[illegible]**	.21
Chief of Medicine						
Presence of	1.07	.05	.82	.03	.72	.03
Full time vs. part-time	±	2.39	±	.76	±	±
Chief of Surgery						
Presence of	1.99	.04	2.58	.31	2.29	.25
Full time vs. part-time	±	2.67	±	.83	±	1.11
Pharmacist						
Presence of	±±	±±	±±	±±	±±	±±
Full time vs. part-time	.01	1.25	.28	4.37**	2.74*	.21
Director of Med. Education						
Presence of	±	.31	±	.66	.10	±
Full time vs. part-time	.25	.03	2.44	.00	2.31	.02
DME Participation in Cont. Ed. Programs	±±	±±	±±	±±	±±	±±

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* P ≤ .10

** P ≤ .05

± Scrutiny of the data indicated that there was no relationship between the independent and dependent variables. Therefore, a statistical computation (x^2) was not performed.

±± Data was insufficient to perform computation (x^2).

b. Same or different consultant for Phase I and Phase II.

c. Interval between transmittal of recommendations and termination date of "implementation period" (date of interview).

2. Consultant characteristics

Data distributed according to consultant.

Since one consultant visited, on the average, 3 hospitals, it was necessary to accommodate the dependent variables of each of his hospitals to produce an average change measure for the consultant.

The following consultant characteristics were utilized:

a. Number of training sessions attended by consultant.

b. Age of consultant

c. $\overline{X}$ number of visits made by consultant to his hospitals.

d. Membership of consultant in specialty (scientific) societies.

Inferential analyses (t tests of significance between $\overline{X}$ change rates), conducted on the data depicted in Table 43 yielded the following results. The reader will note that the only consultation characteristics which appear to differentiate between a high and low change rate are:

1. Visits to hospitals by consultants

Hospitals of those consultants who made, on the average, 2 or more consultation visits, implemented a significantly greater percentage of the recommendations transmitted to them when compared with the hospitals of those consultants who made less than 2 consultation visits.

Table 43

RELATIONSHIP (t TEST) OF CONSULTATION CHARACTERISTICS TO HOSPITAL EDUCATION CHANGES AND RECOMMENDATIONS IN EXPERIMENTAL HOSPITALS

Independent Variable	Dependent Variables															
Consultation Characteristic	Hospital Education Changes								Phase II - IPI of Recommendations							
	Number of Changes				Percent of Changes				Number Implemented				Percent Implemented			
I. Consultant Characteristic	$\bar{X}$	S.D.	N	t Value	$\bar{X}$	S.D.	N	t Value	$\bar{X}$	S.D.	N	t Value	$\bar{X}$	S.D.	N	t Value
Training Sessions Attended by Consultant:																
5 training sessions	23.14	5.42	6	1.69	31.02	6.31	6	.90	6.75	2.22	6	.59	52.35	26.15	6	.83
<5 training sessions	17.13	6.81	9		27.72	6.64	9		5.67	1.97	7		65.81	27.52	7	
Age of Consultant:																
>41 years	19.95	7.65	9	.26	28.02	6.23	9	.68	5.42	4.04	8	.44	56.40	32.77	8	.49
≤41 years	18.92	5.65	6		30.57	6.98	6		6.36	2.26	5		64.72	14.95	5	
Number of Visits Made by Consultant to His Hospitals:																
≥2 visits	22.97	5.07	6	1.59	32.11	4.34	6	1.45	6.97	2.63	6	1.10	78.25	16.36	6	2.64**
<2 visits	17.24	7.09	9		27.00	7.19	9		4.76	3.81	7		43.62	25.38	7	
Membership of Consultant in Specialty Societies:																
Member	21.41	7.68	7	.94	30.14	5.58	7	.20	6.19	3.74	7	.42	64.46	26.78	7	.27
Non-member	17.90	7.13	8		28.08	7.43	8		5.30	3.14	6		53.93	27.72	6	
Hospitals Held by Consultant 1st and 2nd year:																
Same hospital both years	20.67	5.29	5	1.76	30.76	6.19	5	1.30	4.06	3.88	5	.91	55.36	36.63	5	.37
Different hospital each year	14.31	3.67	6		25.09	6.74	6		6.50	3.02	4		47.36	11.89	4	
II. Consultation Process Characteristics (by hospital)																
Training Sessions Attended by Local Coordinator (or DME) of Hospital:																
0-2 sessions	17.92	10.22	26	1.65	28.72	11.91	26	.23	5.89	4.31	19	.81	56.29	32.98	19	1.76*
3-4 sessions	22.93	11.23	15		29.45	9.29	15		7.09	2.63	11		75.87	17.72	11	
Consultants Visiting Hospital 1st and 2nd Year:																
Same consultant both years	22.56	9.83	18	2.87***	30.45	11.12	18	.95	5.13	4.38	15	1.39	69.43	32.41	15	1.25
Different consultant each year	14.30	7.34	20		26.93	7.34	20		7.58	4.39	12		54.28	26.40	12	
Interval between Transmittal of Recommendation and Termination Date:																
<7 months	19.64	7.63	14	.59	28.90	8.85	14	.93	6.85	4.40	13	.15	62.88	33.08	13	.55
7 months or more	22.14	13.25	14		32.74	11.92	14		6.50	4.44	14		70.91	22.40	14	

* $P \leq .10$
** $P \leq .05$
*** $P \leq .01$

2. Consultation visit by same or different consultant during Phase I and Phase II

Hospitals who experienced the same consultant during both phases of the project reported a significantly greater $\overline{X}$ number of hospital education changes ($\overline{X}$ = 22.56) when compared with those hospitals who experienced visits from 2 different consultants ($\overline{X}$ = 14.30) during the two different consultants ($\overline{X}$ = 14.30) during the two different phases of the project.

All in all, the above analyses attempting to relate differential attributes of the hospital, medical staff, and consultation to differential rates of implementation of recommendations and/or changes pertaining to education are at best suggestive rather than definitive. The primary lack of definitiveness of these findings can be readily attributed to the minimal sufficiencies of numbers of cases involved in the analysis and, in some instances, to the very large variability reported in connection with particular selected attributes.

Interaction Between Hospital & Medical Staff and the Receiving of Educational Consultation on the Frequency of Educational Changes

In this unit a series of analyses attempting to assess the combined effects of hospital attribute (i.e., activity, service, etc.) and the presence of the independent variable (i.e., the presence of education consultation) will be assessed in terms of a greater or lesser apparentness of educational changes reported in the hospitals. In these instances two way analyses of variance have been performed on a variety of hospital attributes data (Table 44, pp. 174-180). It should be noted that the analyses have been done on both the number of education changes recorded by the hospital and the proportion of education changes to total number of reported changes. This replication involving two dependent measures was undertaken to note the consistency of findings when the possibility exists for certain biasing effects in the recorded changes. (For instance, the interview used in one hospital might have recorded solely educational changes in contrast to a second hospital which might have recorded many more types of changes in which the educational changes were but a relatively small portion. Furthermore, some hospitals because of size, etc., might have had relatively few to report, whereas other hospitals might have had substantial numbers to report and yet the proportion of educational changes might have been relatively comparable between the hospitals.

Table 44

COMPARISON OF THE EFFECT OF HOSPITAL CHARACTERISTICS

ON HOSPITAL EDUCATION CHANGES (# & %) IN EXPERIMENTAL VS. CONTROL HOSPITALS

Characteristics	Effect of Treatment (Exp. or Control)		Effect of Ind. Variable (Hospital Characteristic)		Interaction Effect	
	# *	%**	#*	%**	#*	%**
Existence of Facilities and Services ICU	Fc= 4.17 $df = \frac{1}{67}$ *P = .05	Fc = 3.66 $df = \frac{1}{67}$ N.S.	Fr = 10.05 P = .01	Fr = 2.03 N.S.	Fi = .32 N.S.	Fi = .63 N.S.
CCU	Fc = 3.75 $df = \frac{1}{67}$ N.S.	Fc = 4.08 P = .05	Fr = 6.50 *P = .05	Fr = .95 N.S.	Fi = .01 N.S.	Fi = .06 N.S.
Org. Outpatient Dept.	Fc = 5.08 $df = \frac{1}{67}$ P = .05	Fc = 4.40 P = .05	Fr = 1.38 N.S.	Fr = .01 N.S.	Fi = .01 N.S.	Fi = 1.41 N.S.
Electroencephalography	Fc = 6.74 $df = \frac{1}{69}$ P = .05	Fc = 1.73 $df = \frac{1}{69}$ N.S.	Fr = 8.75 P = .01	Fr = 3.12 N.S.	Fi = .4621 N.S.	Fi = .02 N.S.
Home Care Program	Fc = 16.05 $df = \frac{1}{71}$ P = .001	Fc = 4.55 $df = \frac{1}{71}$ P = .05	Fr = 16.28 P = .001	Fr = 2.40 N.S.	Fi = 2.01 N.S.	Fi = 4.08 P = .05
Progressive Patient Care	Fc = 2.73 $df = \frac{1}{51}$ N.S.	Fc = 3.70 $df = \frac{1}{51}$ N.S.	Fr = .25 N.S.	Fr = .13 N.S.	Fi = .55 N.S.	Fi = .41 N.S.

(Continuation of Table 44)

Characteristics	Effect of Treatment (Exp. or Control)		Effect of Ind. Variable (Hospital Characteristic)		Interaction Effect	
	#	%	#	%	#	%
Post-operative Recovery Rm.	Fc = 3.05 $df = \frac{1}{71}$ N.S.		Fr = 3.35 N.S.		Fi = 11.51 P = .01	
Inhalation Therapy Dept.	Fc = 3.13 $df = \frac{1}{65}$ N.S.		Fr = 4.08 P = .05		Fi = .5968 N.S.	
Pathology Lab ($\overline{C}$ Pathologist)	Data not Sufficiant					
Dental Facilities	Fc = 10.92 $df = \frac{1}{64}$ P = .01		Fr = 5.01 P = .05		Fi = .4581 N.S.	
Pharmacy ($\overline{c}$ reg. Pharmicist)	Fc = 4.11 df = 70 P = .05		Fr = 2.90 N.S.		Fi = .50 N.S.	
Physical Therapy Dept.	Data not Sufficient					
Prenature Nursery $\overline{m}$	Fc = 5.75 $df = \frac{1}{67}$ P = .05		Fr = 3.32 N.S.		Fi = 2.52 N.S.	

(Continuation of Table 44)

Characteristics	Effect of Treatment (Exp. or Control)		Effect of Ind. Variable (Hospital Characteristic)		Interaction Effect	
	#	%	#	%	#	%
Phsyhiatric Dept.	$F_c = 4.71$ $df = \frac{1}{68}$ $P = .05$		$F_r = .005$ N.S.		$\bar{F}_i = .21$ N.S.	
Rehab. in-Patient Dept.	$F_c = 2.77$ $df = \frac{1}{68}$ N.S.		$\bar{F}_r = 7.46$ $P = .01$		$\bar{F}_i = 3.97$ N.S.	
Social Work Dept.			DATA INAPPROPRIATE			
Utilization Committee			DATA NOT SUFFICIENT			
Internal Medical Audit	$F_c = 3.47$ $df = \frac{1}{69}$ N.S.	$F_c = 2.79$ $df = \frac{1}{69}$ N.S.	$F_r = 3.65$ $df = \frac{1}{69}$ N.S.	$\bar{F}_r = .2883$ N.S.	$F_i = 4.87$ $df = \frac{1}{69}$ $*P = < .05$	$F_i = .0801$ N.S.
External Medical Audit i.e. PAS, MAP	$F_c = 2.29$ $df = \frac{1}{70}$ N.S.		$F_r = 2.45$ $df = \frac{1}{70}$ N.S.		$F_i = .8378$ $df = \frac{1}{70}$ N.S.	

(Continuation of Table 44)

Characteristics	Effect of Treatment (Exp. or Control) #	%	Effect of Ind. Variable (Hospital Characteristic) #	%	Interaction Effect #	%
Existence of Education Programs Approved Med. School Affiliation	Fc = 4.32 $df = \frac{1}{71}$ P = .05		Fr = 1.75 N.S.		Fi = .86 N.S.	
Residency & internship program	Fc = 3.30 $df = \frac{1}{71}$ N.S.	Fc = 3.52 $df = \frac{1}{71}$ N.S.	Fr = 6.40 P = .05	Fr = .54 N.S.	Fi = 1.71 N.S.	Fi = 1.31 N.S.
Extern or Summer Student Programs			DATA NOT SUFFICIENT			
Professional Nursing Schl.	Fc = 3.0289 $df = \frac{1}{71}$ N.S.		Fr = 2.0430 N.S.		Fi = .5965 N.S.	
Affiliated Nursing Students	Fc = 3.37 $df = \frac{1}{60}$ N.S.		Fr = 1.60 N.S.		Fi = .0032 N.S.	
Explicit orientation & education program for trustees			DATA NOT SUFFICIENT			

(Continuation of Table 44)

Characteristics	Effect of Treatment (Exp. or Control)		Effect of Ind. Variable (Hospital Characteristic)		Interaction Effect	
	#	%	#	%	#	%
Functioning trustee=medical Staff Administration Committee	$F_c = 5.71$ $df = \frac{1}{71}$ $P = .05$		$F_r = .3327$ N.S.		$F_i = 4.24$ $P = .05$	
Use of Extramural Consultants						
Nursing	$F_c = .3608$ $df = \frac{1}{65}$ N.S.		$F_r = 1.2879$ $df = \frac{1}{70}$ N.S.		$F_i = 4.4058$ $df = \frac{1}{70}$ *$P = < .05$	
Hospital Administration	$F_c = 5.42$ $df = \frac{1}{62}$ *$P = < .05$	$F_c = 4.19$ $df = \frac{1}{62}$ N.S.	$F_r = .8045$ $df = \frac{1}{62}$ N.S.	$F_r = .6544$ N.S.	$F_i = .1048$ $df = \frac{1}{62}$ N.S.	$F_i = .0006$ N.S.
Allied Health	$F_c = 6.47$ $df = \frac{1}{60}$ $P = .05$		$F_r = 26.19$ $P = .001$		$F_i = 2.37$ N.S.	
Physician	$F_c = 6.20$ *$P = < .05$ $df = \frac{1}{64}$		$F_r = 7.23$ **$P = < .01$ $df = \frac{1}{64}$		$F_i = .02$ N.S. $df = \frac{1}{64}$	
Administrator Characteristics						
1. Degrees Formal degree in Hospital Administration	$F_c = 10.05$ $df = \frac{1}{70}$ **$P = < .01$	$F_c = 1.22$ $df = \frac{1}{70}$ N.S.	$F_r = .0005$ N.S.	$F_r = .60$ N.S.	$F_i = 36.37$ ***$P = .001$	$F_i = .45$ N.S.

(Continuation of Table 44)

Characteristics	Effect of Treatment (Exp. or Control) #	%	Effect of Ind. Variable (Hospital Characteristic) #	%	Interaction Effect #	%
2. Participation in continuing education programs within past yr. relative to role as hospital administrator	Fc = 3.00 df = N.S.		Fr = 2.45 N.S.		Fi = .9976 N.S.	
Existence of Arrangements for Continuing Education Hosp. salaried Dir. of Medical Education	Fc = 3.03 df = $\frac{1}{69}$ N.S.		Fr = 16.82 P = .001		Fi = .94 N.S.	
Education Committee	F_c = 1.5669 df = $\frac{1}{70}$ N.S.	Fc = 6.48 df = $\frac{1}{70}$ P = .05	F_r = 9.3408 df = $\frac{1}{70}$ **P = $<$.01	Fr = 9.45 P = .01	F_i = .8975 df = $\frac{1}{70}$ N.S.	Fi = 2.30 N.S.
Committee or Director of Hosp. wide Education & Training Program	F_c = 2.3 df = $\frac{1}{68}$ N.S.	Fc = 2.44 df = $\frac{1}{68}$ N.S.	F_r = 6.45 df = $\frac{1}{68}$ *P = $<$.05	Fr = 8.42 P = .01	F_i = .229 df = $\frac{1}{68}$ N.S.	Fi = 4.42 P = .05
Solicitation of assistance from N. Eng. Medical School in development or implementation of physician education programs	Fc = 3.25 df = $\frac{1}{63}$ N.S.		Fr = 4.52 P = .05		Fi = 5.53 P = .05	
Staff Usage of Library		DATA NOT SUFFICIENT				

(Continuation of Table 44)

Characteristics	Effect of Treatment (Exp. or Control) #	%	Effect of Ind. Variable (Hospital Characteristics) #	%	Interaction Effect #	%
Interhospital education programs (collaboration in planning or execution with another hospital) Physician Ed.	Fc = 5.05 $df - \frac{1}{61}$ *P = .05		Fr = 3.41 N.S.		Fi = .36 N.S.	
Nursing Ed.	Fc = 5.93 $df = \frac{1}{64}$ P = .05		Fr = 7.64 P = .01		Fi = .58 N.S.	
Allied Health Ed.	Fc = 2.59 $df = \frac{1}{58}$ N.S.		Fr = 1.80 N.S.		Fi = 1.41 N.S.	

* # = number of education changes

** % = % of $\frac{\text{\# education changes}}{\text{total \# education changes}}$

Examination of Table 44 indicates that the following unique combinations of ABSENCE of hospital characteristic and RECEPTION of consultation (interaction) appear to produce a substantially higher number of hospital education changes:

Hospital Administrator with Degree in Hospital Ad. (Fi=36.37, $p<.001$)
Functioning Trustee-Medical Staff-Administration Committee (Fi=4.24, $p<.05$)

Another combination which appears to produce a higher number of hospital education changes is the ABSENCE of consultation and the PRESENCE of solicitation of assistance from New England medical schools in development or implementation of physician education programs. (Fi=5.53, p. 05).

The following combinations of both PRESENCE of the hospital characteristic and RECEPTION of consultation appear to produce a substantially higher number of hospital education changes:

Post-operative Recovery Room (Fi=11.51, $p<.01$)
Internal Medical Audit (Fi=4.87, $p<.05$)
Use of Extramural Nursing Consultant (Fi=4.41, $p<.05$)

The prime interpretation of data of this sort suggests that this unique combination of attribute of the hospital and the reception of educational consultation activity produces a type of synergistic effect. The underlined cause of such synergism might very well be that educational consultants respond to the unique hospital attribute in question and make recommendations and/or stir up the hospital staff so that educational changes are pursued more intensively by the hospital.

Further examination of Table 44 indicates that whether experimental or control hospitals did or did not have the following facilities, a significantly greater number of hospital education changes occurred in EXPERIMENTAL hospitals (effect of treatment):

Intensive Care Unit (Fc=4.17, $p<.05$)
Outpatient Department (Fc=5.08, $p<.05$
Electroencephalogram (Fc=6.74, $p<.05$)
Home Care Program (Fc=16.05, $p<.001$)
Dental Facilities (Fc=10.92, $p<.01$)
Pharmacy (with pharmacist) (Fc=4.11, $p<.05$)
Premature Nursery (Fc=5.75, $p<.05$)
Psychiatric Unit (Fc=4.71, $p<.05$)
An Approved Medical School Affiliation (Fc=4.32, $p<.05$)

Extramural consultants:
Physician (Fc=6.20, $p < .05$)
Allied Health (Fc=6.47, $p < .05$)
Hospital Administration (Fc=5.42, $p < .05$)

Interhospital education programs for:
Physicians (Fc=5.05, $p < .05$)
Nursing (Fc=5.93, $p < .05$)

Findings such as these are associated with a greater number of educational changes for several possible reasons. For one, the attribute in question may intrinsically be complex enough for undergoing such change as to require special educational activity for its successful contribution to patient care. In addition, it may be that such activities or features of hospitals intrigue the attention of the medical consultants and are the object of discussion and/or recommendation which ultimately lead to educational changes.

An alternative explanation might be that these features of hospitals have particular relevance to patient care activities and are more likely to be associated with educational change rather than patient care-oriented activities. Suffice it to say that data such as these might very well be considered as a series of suggested hospital attributes that could be utilized as criteria for selection of hospitals to receive educational consultation with the tactical objective that such hospitals are more likely to be instances of "success" for the educational consultation. In somewhat similar fashion these findings might lead to the development of a checklist of priority issues to be discussed at a given hospital by an educational consultant in the course of continuing medical and allied health continuing education.

Examination of the data in Table 44 relating to the effect of the independent variable, i.e., hospital characteristic, indicates that regardless of the reception of educational consultation a significantly greater number of educational changes were found in those hospitals having intensive care units, coronary care units, EEG units, home care programs, inhalation therapy departments, dental facilities, rehabilitation, programs for inpatients, the use of external consultants for allied health programs and the use of external consultants for the continued use of educational programs, hospital salaried directors of medical education, presence of education committees, presence of committees or directors of hospital-wide education and training, solicitation of assistance from New England medical schools for the development of physician education programs, presence of residency and/or internship programs, and participation in inter-hospital education programs for nursing.

With regard to Table 45, the data indicates that, ignoring whether hospitals received or did not receive consultation, a significant number of hospital education changes occurred in those hospitals having Full Time (as compared to Part Time) chiefs in the following areas:

Radiology (Fr=18.46, $p<.001$)
Pathology (Fr=18.81, $p<.001$)
Medicine (Fr=6.64, $p<.05$)
Pharmacy (Fr=5.13, $p<.05$)

Ignoring whether hospitals received or did not receive consultation, a significant number of hospital education changes occurred in those hospitals having (as compared to not having) a Chief of Surgery (Fr=5.80, $p<.05$).

This roster of hospital & medical staff attributes associated with greater frequency of educational changes is not particularly surprising in that the roster of attributes contains either examples of such educational changes and/or the institution's vehicles or resources for implementing such educational changes. In short, those that have the facility for the introduction of educational changes are likely to manifest such changes.

Another way to look upon the data in Tables 44 & 45 is to note the instances (rows) in which the effect of treatment or the presence of educational consultation is not associated with a significant influence on the number or percentage of educational changes reported by the institution. Such instances might be perceived as "failures" or "instances of lack of success" on the part of the educational consultant in stimulating or explicitly recommending continuing educational programs for the hospital staff, and as such might very well represent a dimension of training and/or consultation strategy to be stressed during the course of educational consultation programs. The comments to be made in regard to the data in these tables relate to the pattern of somewhat discrepant findings when the dependent measure is either number and/or percentage of educational changes recorded by the participating hospitals.

Table 45
COMPARISON OF THE EFFECT OF MEDICAL STAFF CHARACTERISTICS ON HOSPITAL EDUCATION CHANGES (# & %) IN EXPERIMENTAL VS. CONTROL HOSPITAL

(Values yielded from Analysis of Variance)

Characteristic	Effect of Treatment (Exp. Control)		Effect of Independent Variable (Medical Staff Characteristic)		Interaction	
	#	%	#	%	#	%
Radiologist presence of			← DATA NOT SUFFICIENT →			
full or part time	$F_c = 1.92$ $df = \frac{1}{67}$ N.S.		$F_r = 18.46$ $df = \frac{1}{67}$ $^{**}P = .001$		$F_i = .0031$ $df = \frac{1}{67}$	
Pathologist presence of			← DATA NOT SUFFICIENT →			
full or part time	$Fc = .9064$ $df = \frac{1}{62}$ N.S.		$F_r = 18.81$ $df = \frac{1}{62}$ $^{*}P = .001$		$F_i = .0206$ $df = \frac{1}{62}$	
Chief of Medicine Presence of	$F_c = 5.88$ $df = \frac{1}{67}$ N.S.		$F_r = 2.30$ $df = \frac{1}{67}$ N.S.		$F_i = .0688$ $df = \frac{1}{67}$ N.S.	
full or part time	$Fc = 1.60$ N.S.		$Pr = 6.64$ $^{*}P = .05$		$Fi = 2.39$ N.S.	

(Continuation of Table 45)

Characteristic	Effect of Treatment (Exp. Control) #	%	Effect of Independent Variable (Medical Staff Characteristic) #	%	Interaction #	%
Chief of Surgery						
Presence of	$F_c = 3.89$ $df = \frac{1}{67}$ N.S.		$F_r = 5.80$ $df = \frac{1}{67}$ $^* P = .05$		$F_i = 3.36$ $df = \frac{1}{67}$ N.S.	
full or part time	$F_c = 2.77$ $df = \frac{1}{29}$ N.S.		$F_r = 3.79$ $df = \frac{1}{29}$ N.S.		$F_i = .40$ $df = \frac{1}{29}$ N.S.	
Pharmacist						
presence of	← DATA NOT SUFFICIENT →					
full or part time	Fc = 1.9715 df = 1/62 N.S.		Fr = 5.1250 $^*P = .05$		Fi = .2527 N.S.	
Director of Medical Education						
presence of	DATA NOT SUFFICIENT					
full or part time	Fc = .0005 $df = \frac{1}{28}$		Fr = 1.08 N.S.		Fi = 3.44 N.S.	
participation on continuing education programs	← DATA NOT SUFFICIENT →					

CONCLUSION & SUMMARY

Results of the three year study of the impact of education consultation on development of hospital-based CME programs indicate that, when the impact of consultation was evaluated under controlled conditions, critera of effective consultation were met: 1) 18 months after consultants had submitted their recommendations experimental hospitals had fully implemented 60 percent of them; and 2) a statistically significant greater number of physician education changes occurred at hospitals receiving consultation than at a matched group of hospitals not receiving consultation.

The later criterium is further reinforced by the finding that a higher degree of exposure to PMI consultation results in a greater change rate, as evidenced by the statistically significantly greater number of physician education changes occurring at those experimental hospitals receiving three or more visits by medical education consultants when compared with those hospitals receiving less than three visits.

Additional support for this finding regarding influence of exposure to PMI, again appears upon inspection of recommendation implementation data. Consulted hospitals receiving three or more visits by consulting medical educators implemented in full or part a significantly greater percentage* of the recommendations transmitted to them.

These outcomes would seem to support the conclusion that limited inputs by physicians acting as education consultants can significantly facilitate development of hospital-based continuing medical education programs. In view of the fact that experimental hospitals, widely distributed over four New England states and ranging from less than 25 beds and 10 physicians to over 300 beds and 150 physicians, were able to demonstrate significant increases in CME program development, one may reasonably infer that with education consultation, community hospitals regardless of size or location can develop and maintain CME programs. These conclusions have direct implications for professional hospital medical educators who are responsible for developing programs at their own hospitals and who can provide the consultative assistance to facilitate program development at other hospitals that do not yet enjoy the resources of a professional hospital medical educator.

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*Percentage refers to number implemented out of number transmitted.

While study results showed that relatively small consultative inputs could stimulate program development, and although we suggest that the role of education consultant could be assumed by established medical educators, it still may not be feasible to supply such help to all hospitals in all parts of the country. Furthermore, in the early phases of the study, both consultants and hospital CME program coordinators repeatedly expressed a desire for more readily available information of the what-to-do and how-to-do-it variety. They wanted a comprehensive, yet flexible framework upon which they could base their approach to the problem of developing relevant education programs. Their desire was for guidelines and practical suggestions which they could relate, adapt and apply to the programs for which they were responsible.

We integrated insights gained in the present study with experience and data accumulated by PMI since 1961 while collaborating with over 100 community hospitals in attempts to build better education programs. The outcome was the creation of a book entitled Continuing Medical Education at Community Hospitals: A Manual for Program Development.* The manual provides guidelines for: 1) developing community hospital-based programs of continuing medical education; and 2) delivering education consultation to community hospitals. Presented in the manual is a Systematic Approach to Developing Education Programs, which is a problem-solving application of basic scientific methodology. Development of relevant hospital-based continuing education programs is viewed as the problem and is approached through a sequence of eight steps:

1. Marshall commitment, support and personnel
2. State overall goals
3. Identify education needs
4. Formulate objectives addressed to identified needs
5. Consider potential elements of an education program
6. Determine local resources and needed supplemental resources
7. Structure and implement program based on objectives
8. Evaluate program relative to objectives and goals

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*Written by Norman S. Stearns, MD, Marjorie E. Getchell, MA, and Robert A. Gold, EdM; and published by the Massachusetts Medical Society as a supplement to the New New England Journal of Medicine, Volume 284, Number 20, May 20, 1971. A copy of the manual accompanies the present report.

The manual also includes a chapter on principles, techniques and procedures for delivering consultation and a section in which invited contributors, including Drs. Angelo Angelides, Clement Brown, Daniel Fleisher, Jack Perlman, Virgil Siee and John Williamson present their approaches to relating quality care assessment to continuing medical education.

PMI's study of continuing medical education activities at more than 80 community hospitals in New England indicates that hospitals recognize the need for CME programs and are ready to accept responsibility for developing them. Our observations also suggest that there is room for improvement in planning and implementation of all aspects of hospital education programs. Desired changes can be stimulated by education consultation to hospitals and by training of hospital's physician education program coordinators.

Outcomes of PMI's consultation efforts have been reported in terms of implementation of consultant recommendations and in terms of reported changes in educational activities in hospitals. We recognize behavioral change leading to improved patient care as the ultimate demonstration of educational accomplishment. But as a beginning step, we will accept change that demonstrates a willingness of physicians to help create educational opportunities at their own hospitals and to assume responsibility for carrying out these efforts on a continuing basis.

CONTRACT DISSEMINATION

Following is a listing of formal presentations and publications in which the contract, its design, procedures, or outcomes, is central to the discussion. Also listed are published materials of PMI or other organizations and individuals which cite the contract in reference to their own work being presented. Since the publication of Continuing Medical Education in Community Hospitals: A Manual for Program Development, reviews and reports of the manual have appeared in several publications. A listing of these sources appears in a subsequent section.

Formal Presentations

"Commitment and Involvement Requirements for Education Program Development in Community Hospitals", Norman S. Stearns, presented at Conference on Medical Care and Education in the Community Hospital, sponsored by the University of Virginia Medical School, September 19-20, 1969, Charlottesville, Virginia.

"Program Motivation and Stimulation - The Activities of the Postgraduate Medical Institute", Norman S. Stearns, presented at Conference on Goals and Techniques of Continuing Education, sponsored by the Association for Hospital Medical Education, February 4-5, 1970, Chicago, Illinois.

"The Postgraduate Medical Institute in Continuing Medical Education", Norman S. Stearns, presented at Conference on Continuing Medical Education, sponsored by American Medical Association, October 13-15, 1970, Chicago, Illinois.

"The Impact of Educational Consultation on Development of Continuing Medical Education Programs in Community Hospitals", Norman S. Stearns, Marjorie E. Getchell, Robert A. Gold, and Martha Boucouvalas, presented at the 67th Annual Congress on Medical Education, sponsored by the Association for Hospital Medical Education, February 12-13, 1971, Chicago, Illinois. (See Appendix M for a copy of the presentation.)

Published Materials

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Citations

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Postgraduate Medical Institute: Its Challenging Role in the Continuing Education of Physicians and Other Health Care Personnel, Robert P. McCombs, M.D., Massachusetts Physician, June, 1970, 34.

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Summary of Minutes of Executive Committee Meeting, October 28, 1970, Los Angeles, California. AHME Journal, 4(1):62, January - February 1971.

Continuing Education: A Standoff Between You and the Educator? Patient Care, V(10): 31-32, May 30, 1971.

Hall, JH: President's Message - A Challenging Chance for Change. AHME Journal, 4(3):1, May - June 1971.

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Manual for CME Program Development in Community Hospitals. AMA Continuing Medical Education Newsletter, III (2):2, August 1971.

Community Hospitals Urged to Meet Continuing Medical Education Needs. Cross-Reference, 1(9):10, September 1971.

CONTRACT "SPIN-OFF PROJECTS

CONTRACT NO. NIH 70-4149 (PH 108-69-47)

Develop and Evaluate the Consultation Method in Establishing and Maintaining Educational Programs for Physicians in Those Hospitals Located in Depressed Areas.

A direct outgrowth of the present contract was contract NIH70-4149 (PH 108-69-47), in which PMI developed and used educational consultation in an attempt to stimulate relevant programs of physician continuing education at three hospitals located in depressed areas. Consultation procedures used in the present study (NIH70-4150) to promote conventional physician education programs at community hospitals, were modified and utilized as a teaching technique and as a device to engage medical staffs in activities relevant to health care problems of the poor.

An interdisciplinary consultant team of physicians and behavioral scientists, expert in medical education, community medicine, health care delivery, and evaluation, met in consultation-teaching seminars with a physician-led team of hospital personnel, composed of physicians, nurses, allied health professionals, administrators and trustees from a 600-plus bed community hospital located in an urban ghetto. The two teams examined the poverty area community and the hospital's relationship to it as a "patient" with the health care problems of such a "patient" the subject of discussion. Significant in-hospital communication gaps were uncovered and addressed.

In addition to their role in planning formal education activities, the consultation sessions served directly as educational forums themselves. Subsequent changes in hospital policy and establishment of additional relevant education and service programs point to potential utility of the consultation method.

Members of the consultant team also met with physicians and administrators of two smaller community hospitals, one located in a low-income, high population density, white community and the other in an economically declining, former "mill town" possessing a significant Spanish-speaking population. In the former case, the consultation achieved its program development objectives only after considerable expenditure of efforts to gain the hospital's trust and acceptance of the need for such continuing education. In the latter case, despite repeated attempts, the establishment of a lasting consultative relationship was not achieved.

As reported to the 1970 Medical Services Conference of the Council on Medical Service of the American Medical Education in Boston, November 28, 1970*, this pilot attempt to stimulate the development of continuing education programs for physicians at hospitals in depressed areas through consultation has indicated the potential feasibility and utility of the approach. Despite difficulties encountered, experience points to the need for its use to bridge knowledge, service and information gaps between innovative activists, already deeply involved in the health care problems of the poor and in altering existing health care delivery systems, and the majority of hospital medical staffs which are as yet uninvolved.

LIBRARY DEVELOPMENT PROGRAM

In response to needs expressed by hospitals participating in the present study** for help in developing medical library facilities, PMI undertook a library development program in cooperation with and supported in part by the New England Regional Medical Library Service (NERMLS) at the Francis A. Countway Library of Medicine. The first phase of this program resulted in the establishment of a list of 47 texts and 39 journals which can be considered to be the basis for a Core Library for use by practitioners in community hospitals. This list is based upon recommendations elicited from more than 400 specialists from regions throughout the country representing 41 areas of medical practice.

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*A refined version of the paper is published in *Medical Care*, 10(1), January - February, 1972, under the title "Education Consultation: A Team Approach To Stimulating Hospital Staff Involvement in Health Care Medical Problems of the Poor."

**Contract No. NIH 70-4150

Conceptually, basic requirements of the core library are that all major areas of medical practice be covered, that a minimal number of high-quality journals appropriate to practice be included and that all materials be readily accessible and logically arranged for use by physicians.*

Acceptance of the concept of the medical core and suggestions that similar materials should be available for nurses and other allied health personnel, stimulated development of an Integrated Health Science Core Library** for physicians, nurses and allied health practitioners. The Integrated Health Science Core Library collection includes 87 books and 74 journals recommended by specialists as appropriate for practitioners at community hospitals. The collection continues to support the concepts, first suggested by the Medical Core, that materials available in a hospital library should be authoritative, current and comprehensive, covering all major areas of practice. It suggests that hospital libraries should be used by the entire health care team. Arrangements of materials within the total collection has been purposely structured to facilitate and encourage their interdisciplinary use.

In addition to compiling the Core collections, PMI, in conjunction with the New England Regional Medical Library Service (NERMLS) has also worked extensively with community hospitals to train relevant personnel; to stimulate development of libraries incorporating Core Library principles; and to evaluate changes in the provision and use of library-information facilities and services at hospitals participating in the Library Development Program.

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*Stearns,NS, Ratcliff; WW: A Core Medical Library for Practitioners in Community Hospitals. NEJM, 280:474-480, February 1969.

**Stearns, NS, Ratcliff, WW: An Integrated Health Science Core Library for Physicians, Nurses and Allied Health Practitioners in Community Hospitals. NEJM, 283:1489, 1970.

APPENDIX A

NORMAN S. STEARNS, "POSITIVE APPROACHES TO CONTINUING MEDICAL EDUCATION IN COMMUNITY HOSPITALS", New England Journal of Medicine, 277:1341-1344, 1967

SPECIAL ARTICLE

POSITIVE APPROACHES TO CONTINUING MEDICAL EDUCATION IN COMMUNITY HOSPITALS*

NORMAN S. STEARNS, M.D.†

BOSTON

THE Postgraduate Medical Institute, established in 1953 under the sponsorship of the Massachusetts Medical Society, was designed to encourage and, at least in part, to provide for the continuing education of physicians.[1] The Institute believes that community hospitals will be the primary focus of continuing education activity for physicians in the future. It is expected that practitioners will continue to educate themselves by reading and by attendance at society meetings and formal courses. Such individual efforts, however, will truly be recognized and rewarded in the hospital setting and particularly in hospitals with meaningful education programs of their own.

The present goal of the Institute is not simply to transmit a few facts to a limited number of physicians through a series of isolated lectures, grand rounds or television presentations, but rather to cultivate an atmosphere of enlightened interest in good medical practice through establishment of co-ordinated hospital-based programs, with the use of all appropriate available educational technics, which will continually challenge and enhance the capabilities of every staff member. The program should serve as a means of communication for *all* staff members, including nurses and other paramedical personnel, and should stress and stimulate total patient care as a co-operative endeavor. The programs that have the best chance for continuing success are those that provide for responsible leadership at the local level and make full use of professional and teaching talents of existing staff members. In addition, guest consultants should always be used on a regular basis to supplement local strengths. From a community standpoint, the practical planning approach will recognize the areas of practice that are adequately covered as well as those that are not. Moreover, those interested and capable of becoming proficient in specialty areas should be encouraged to become more adept so that they may fulfill community needs as teachers as well as practitioners. If this opportunity for further training cannot be provided at the local level it should be sought at academic centers through co-operative arrangements.

To achieve these goals on a broad scale, the Postgraduate Medical Institute as a widely supported central agency provides both stimulus and needed resources enabling individual community hospitals, regardless of size, to improve existing educational programs or to undertake new ones in a manner that might otherwise be impossible because of limited availability of experienced medical educators or of competent teachers and consultants. Thus, the Institute is interested in providing consultation services for development of individual hospital programs, as well as continuing such exercises as grand-round consultant programs, lecture courses, television productions (Boston Medical Reports[2]) and television-telephone two-way conferences.

PRACTICAL PROGRAM PLANNING

The experience of the Institute indicates that any hospital desirous of introducing new programs of continuing medical education, or of improving existing ones, can take specific steps.

First of all, the people responsible for initiating educational programs should review the pertinent literature.[1-12] References cited provide (general and specific) background material that will be helpful to those concerned with setting the course of any new undertaking.

The hospital, including its medical and administrative staffs and trustees, should define overall program objectives. A freewheeling and somewhat idealistic approach is encouraged at the outset. A written list of all immediate and long-range objectives should be compiled.

The hospital should assign, elect or hire a physician to assume responsibility for overall program development at the local level. Whenever feasible, this person should be salaried. In any event, he must be assured of strong moral support on a continuing basis by a majority of the staff, the administration and the trustees.

A complete outline of all existing hospital and community-service activities requiring participation by staff physicians is essential. The Postgraduate Medical Institute provides forms to expedite information-gathering efforts. Information obtained will

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*Presented on May 17, 1967 at the annual meeting of the Massachusetts Medical Society (requests for reprints should be addressed to the Postgraduate Medical Institute, 22 Fenway, Boston, Massachusetts 02215).

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Reprinted from the *New England Journal of Medicine*
277:1341-1344 (December 21), 1967

enable a realistic appraisal of what can be expected in the way of actual participation in existing or proposed activities and will identify existing and avoid future conflicts of time and place in the program.

It is essential to learn as much as possible about each staff member, particularly about his willingness to participate in any new program. Usually, a devoted few have alone borne the burden of existing or previously attempted programs, with minimal support and little thanks from the staff as a whole. This situation must be recognized. Any new plan must emphasize the absolute necessity of creating a program based on *shared* responsibility for its operation. For these reasons, a staff questionnaire is provided by the Institute, and hospitals are requested to send them to all staff members together with a letter informing each physician that his support is being sought as an essential participant in an overall hospital activity. In addition to biographic data and curriculum vitae, the questionnaire requests specific answers to the following questions:

> Are you interested in participating in teaching activities at *this* hospital (i.e. rounds, clinics, lectures, etc.)?
>
> Would you be willing to assume responsibility for teaching sessions as "instructor"? If yes, please indicate your particular interest.
>
> Would you be willing to attend scheduled teaching activities conducted by others at this hospital as a part of your own continuing education program? If yes, indicate number of hours per week or month.
>
> Please suggest days and times you prefer for scheduled educational meetings.
>
> Would you be willing to allow presentation and discussion of *your* private patients, upon request, for teaching purposes at rounds and conferences?

Construction of the new program begins with a review of all available information. Analysis of larger hospitals with multiple activities can be made initially on a departmental basis. Smaller institutions with few activities can be analyzed on a total hospital basis from the outset. Idealized objectives are boiled down to ones that seem practical and immediately attainable. Existing activities that warrant continuance, with or without modification, are recorded on a simple master-plan schedule form provided by the Postgraduate Medical Institute. Activities not considered worthwhile are abandoned. Suggested new activities are discussed, and those that seem reasonable of accomplishment are recorded on a new master-plan form. Conflicts of time, place and person become immediately apparent. When schedules are made on a specialty service basis, care must be taken to integrate interservice activities whenever possible and to identify and co-ordinate full staff activities on a separate master-plan form.

Opportunities for establishing meaningful affiliations on a continuing basis between community hospitals and university centers for purposes of education, consultation and, in some institutions, patient care should be explored.[8] Integrated fellowship, residency and practitioner training programs should be considered.[8] The potential role of regional medical programs in effecting affiliations for appropriate purposes should be discussed locally and with representatives of the Regional Medical Program Staff.[10,11]

All members of the staff on each service should be strongly urged to participate in teaching activities by virtue of assigned responsibility for specific rounds, conferences and clinics. Full staff participation will ensure an equitable distribution of assignments, thereby preventing excessive demands on the time of any few members. Individual practitioners should be encouraged to associate themselves for several months each year with a specialty group organized for patient care and teaching purposes or with guest-consultant rounds held regularly in specialty fields. These small groups should provide a nucleus of physicians who will find appropriate case material and be present when cases are discussed. Unless house officers are available, these practitioners should present selected cases to visiting consultants or to qualified staff members assigned to conference or round responsibility in advance. Regularly scheduled bedside rounds or at the very least patient oriented grand rounds should be encouraged *in all hospitals* and at every opportunity.

The current and projected role of service chiefs should be considered in relation to formal teaching activities and also to responsible leadership in stimulating heightened interest in quality care *on a continuing basis*. When such a step is deemed appropriate for discussion, the potential value of salaried service chiefs on a part-time or geographic fulltime basis should be given serious consideration.

If resistance to the use of private patients for teaching purposes exists (for example, presentation at grand rounds), efforts should be made at the local level to dispel any such fears. If these efforts by local leaders are not successful, help from respected educators outside the community should be sought.

Most community hospitals have a consultant staff, and local practitioners regularly use certain other distinguished physicians for referral purposes. All consultants who directly benefit from their association with community-hospital staff physicians should be requested to contribute to the overall program by assuming limited responsibility for designated teaching sessions.

Participation by staff radiologists and pathologists enhances any grand-round program. These key people should be given advance notification of cases to be presented in time to ensure proper preparation of material.

The Postgraduate Medical Institute notifies local chairmen of the background, interest, academic affiliations and titles of their speakers by postcards sent in advance of meetings. Requirements for slide and movie projectors, blackboards or other teaching aids are requested of each speaker, and the local chairmen are so informed. Arrangements for these facilities should be made in advance of the meeting by the local chairman. The Institute also notifies speakers of the nature of teaching sessions, travel directions, number of physicians expected to attend (when known) and the time, date and duration of each session.

All programs should include some form of mortality conference and audit of service as required for hospital accreditation. The quality of medical care can also be assessed in an on-going program of current case medical audit.[12] Information obtained from usually routine-staff committee meetings (including utilization review, tissue, infection control and tumor committees), if properly prepared, can provide the basis for periodic full-staff audit meetings. Self-evaluation and self-criticism should be fostered as a privilege of physicians in practice. The purpose of current case audit should be education rather than control, and improvement of the quality of care should be the essential objective of audit.

Two simple technics that have promoted interest are the "X-Ray of the Week," displayed in the x-ray department, and the gross or microscopical "Specimen of the Week," in the pathology department, with explanatory notes or with an invitation to "make a diagnosis." Answers are provided in writing or directly by the radiologist and pathologist.

Teaching aids such as motion pictures, programmed instruction devices and talking slides should all be considered and used to fill specific needs.

Hospitals in many areas may round out or supplement their own programs by direct participation in television, telephone and radio-network programs in a regular fashion.

Medical-library facilities and services should be reviewed, evaluated and updated. Specific consultation advice should be obtained for library development when facilities and services appear inadequate.

The number of hours per week or per month of scheduled educational activities should be carefully reviewed as the formal program takes shape. It is best to begin with a reasonable program in terms of time required, with staff questionnaire responses as a guide to what can be expected in the way of physician participation.

Nurses, technicians and other ancillary personnel should be invited to as many medical staff teaching activities as possible even though the educational content of sessions is geared to physicians.

Staff physicians should be involved on a shared-responsibility basis in educational programs of nurses, technicians and other ancillary personnel.

With the aforementioned considerations clearly in focus, the working program is constructed. After all elements of the program have been outlined and incorporated on a master-planning sheet, the formal educational sessions should be recorded on a calendar form. The Institute encourages planning on a basis of six to twelve months whenever possible. The calendar form, with holidays and local "nomeeting" days clearly noted, is the final planning instrument. The program in action will reflect this planning.

Those planning the programs need not be discouraged by "poor attendance" at any few scheduled sessions, but should pay attention to overall participation in the continuing program. New means to involve nonparticipants, and to encourage and reward continued participation by those actively involved in the program, should be constantly sought.

SUMMARY AND CONCLUSIONS

Every community hospital should have a sound, broad and well planned educational program primarily to provide for continuing staff education as a means of encouraging better patient care. The Postgraduate Medical Institute sponsored by the Massachusetts Medical Society has, since 1953, encouraged and in part provided for the continuing education of large number of practitioners through a variety of technics.

On the basis of the Institute's experience, program planners in community hospitals should take the following steps to develop new educational programs: review pertinent literature; discuss program objectives; mobilize full support for a local program director; critically analyze ongoing educational activities; appraise honestly the contribution of each staff member to existing and to potential new program activities as teachers and participants; plan a new program based upon realistic appreciation of time commitments by all participants; consider affiliation with other institutions for mutual benefit in education and patient care endeavors; consider every device to encourage full staff participation in various aspects of the overall program on a continuing basis; consider current and projected new roles of service chiefs; encourage full utilization of private patients in teaching at bedside and grand rounds; use existing staff consultants in formal programs and introduce guest consultants on a regular basis to supplement local strengths or to meet local needs; include mortality conferences and current case audits in the formal program; involve nurses and paramedical personnel whenever possible; and encourage planning of and fix responsibility for all aspects of formal activities well in advance of scheduled sessions.

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THE EDUCATOR-IN-CHIEF

EDUCATION sans effort is a technologic utopia for which many pine: under the pillow of rest, the dormo-digest gently murmuring and filtering information, like detergent innuendos, into the permanency of the unconscious. Or the digital diviner, with a console of keys that need but proper pressing to display in appropriate sequence the differential diagnoses. But such devices, should they ever become available, would incidentally do away with the need for educated men of medicine. For his future preservation, as well as for his present competence, the physician must toil at self-education.

Elsewhere, Stearns outlines how it should be done at a community hospital. To this end, its corporate body of professionals, no less than the individual physician, must commit itself to both ergs of extra effort and volts of abnegation. Doctors are too busy to assume implementation of a hospital-wide education program in addition to their other duties. The implementation has to become the responsibility and privileged province of one individual. The boundaries of his province must, moreover, be precise. They must include the right to visit, converse with and use for teaching all patients in the hospital. This provision is especially crucial if the organization of the hospital includes house officers at any level. The Educator-in-Chief (equivalent to any physician-in-chief) should have the wisdom and compassion to know which patients are by nature of their condition not candidates for his program.

To bolster this indispensably wide authority, and to prevent any possibility of his interfering with the basic relations of patient and private physician, the Educator-in-Chief must not engage in practice himself. His support must be provided by an uncompromised stipend, and if a community hospital wants an Educator-in-Chief worth his salt, the stipend should exceed the median physician income of the hospital's locale. In hospitals unable to support a full-time Educator-in-Chief, a part-time arrangement may be unavoidable, but it would be much preferable if the E-in-C spent his remaining time performing his special function at other hospitals, much as pathologists or radiologists often do now, rather than engaging in practice in his community. For his sake, as well as that of his colleagues, he should not be in competition with them. Only under such arrangements can he deal freely with the patients of others.

Stearns mentions another indispensable feature of the community hospital education program. Of those staff physicians who participate – and the more the better – their commitment must be unstinted and unqualified. If a staff member has a teaching assignment, he must carry it out, he must prepare for it, and he must be punctual. Otherwise the program collapses. How then will he handle an emergency affecting one of his patients? The only solution is prior arrangement, as carefully scheduled in advance as the teaching exercise itself, with a colleague who must cover for him. Dedication to and planning for the quality of the teaching program must have the same priority as time off.

If the new regional programs are to prevail, they will provide library and university services that can be used, as Stearns points out, to support a community hospital education program handsomely. University services will never, however, be more than supportive unless they take over completely, and this is undesirable if a program is to enjoy the proud morale of self-sufficiency. The effectiveness of an educational program will be a measure of the home team's effort. Neither expert coaching nor modern equipment can succeed by itself.

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APPENDIX B

CONTRACT SCOPE OF WORK - PHASE I AND PHASE II

COPY OF SCOPE OF WORK - PHASE I AND PHASE II

Bureau of Health Manpower
Public Health Service Contract
PH 108-67-170

ARTICLE I. Scope of Work

PHASE I - OBJECTIVES

a. Establish criteria for selecting hospitals for the consultation service. Criteria shall take into account such factors as desire for programs of continuing medical education; distance from major medical centers; size of the hospitals; the organizational structure of the hospital; the role of the hospital within the community; and the existing and aspired to educational facilities and resources for programs of continuing medical education. The criteria shall be reviewed and approved by the Project Officer.

b. Utilize the available data on the organizational characteristics and continuing education programs of all the community hospitals in the four state region in order to ascertain to what extent each hospital meets the criteria established in Step No. 1.

c. Using the criteria and data developed in Step No. 1 and 2, select a group of thirty hospitals for inclusion in the consultative service to develop programs of continuing medical education at those hospitals.

d. With the aid of the Regional Advisory Boards, implement the consultative service to the community hospitals and institute the actual programs of continuing medical education at these hospitals. The Contractor shall attempt to introduce the following principles of sound educational program development into the community hospitals' programs of continuing medical education:

(1) Secure the participation of representatives of the hospital's physicians in planning and carrying out the programs of continuing medical education.

(2) Obtain data concerning the educational interests and needs of the hospital's physicians as a basis for planning continuing education programs.

(3) Define specific educational objectives based on analysis of the needs and interests of the physicians.

(4) Select educational methods which are most likely to achieve these objectives.

Prior to the onset of the consultative procedures, the Contractor shall translate these four general objectives into specific parameters, in order that their introduction into the educational programs can be objectively measured.

e. Evaluate the effectiveness of the consultation service in aiding community hospitals to establish continuing education programs for their physicians. Specifically, the Contractor shall:

(1) Make a quantitative analysis of programs initiated and participation and response.

(2) Analyze the extent to which the specific parameters of the principles of educational program development enumerated in section 4 are incorporated into the programs of continuing medical education at the community hospitals.

The methods and instruments to accomplish this evaluation are to be approved by the Project Officer.

f. Collect observations and data which shall describe some of the factors, both in the consultative service and in the hospitals, which are important in either aiding or inhibiting the development of programs of continuing medical education within the hospitals. These observations and data shall be used to elucidate objective characteristics, both of the hospital and the consultation service, which might differentially be associated with current or future development of programs of continuing medical education of physicians.

g. Explore methods for evaluating the effects of both program content and techniques of program presentation on the medical practice of participating physicians.

h. Analyze, tabulate, and interpret the data.

PHASE II - OBJECTIVES

i. Utilizing experiences and procedures developed in Phase I, continue consultation services to selected community hospitals in the four state region. The consultation service shall be varied so that half of the hospitals receive five visits in a 13 month period (intensive consultation) and half only two visits in that same 13 month period (minimal consultation).

j. Continue and conclude the evaluation of the effectiveness of the consultation method in establishing and maintaining educational activities and the selected community hospitals. Specifically, such evaluation shall include:

(1) The extent to which the recommendations of the contractor are implemented at the community hospital.

(2) An assessment of the relative efficacy of intensive vs. minimal consultation (as defined in l. above) in the implementation of the contractor's recommendations.

k. Continue to describe the factors, both in the consultative service and in the hospital, which materially affect extended maintenance of physician education programs.

l. Design and execute a training program for physicians who will provide consultation services to community hospitals in the region. The program shall be developed along sound principles of educational methodology. Curriculum shall include units in educational methods and technology, behavioral psychology, available educational resources, utilization of health manpower, and others. Approximately ten consultant trainees shall receive the equivalent of seven (7) man-days of training.

m. Design and execute a training program for physicians who will serve as local education coordinators or directors of medical education. The objective of this program is to make local coordinators better able to cope with problems of continuing medical education on a sustaining basis. A local coordinator or director of medical education from each of the 40 participating hospitals shall take part in six (6) man-days of training.

APPENDIX C

LETTER OF INVITATION TO COMMUNITY HOSPITALS

POSTGRADUATE MEDICAL INSTITUTE
UNDER THE SPONSORSHIP OF THE
MASSACHUSETTS MEDICAL SOCIETY
22 FENWAY, BOSTON, MASS. 02215

ROBERT P. McCOMBS, M.D., PRESIDENT
HOWARD F. ROOT, M.D., VICE-PRESIDENT
NORMAN S. STEARNS, M.D., MEDICAL DIRECTOR
MILTON C. PAIGE, JR., SECRETARY

KENMORE 6-8812

May 31, 1967

Postgraduate Medical Institute (PMI), sponsored by the Massachusetts Medical Society, has for a number of years made available consultation services to New England hospitals, enabling them to improve existing medical educational programs or to undertake new ones. To date, the Institute has assisted over forty community hospitals in Maine, New Hampshire, Rhode Island, and Massachusetts.

The goal of PMI activities in community hospitals is not simply to transmit a few facts through a series of lectures to a limited number of physicians. It is rather to cultivate an atmosphere of heightened interest in good medical practice through establishment of hospital based educational programs. To achieve this objective, PMI provides guidance to hospitals who wish to develop their own programs and aids in carrying out the programs, e.g., by making guest faculty consultants available to supplement teaching activities of local physicians as required.

Postgraduate Medical Institute, through a contract with the U. S. Public Health Service and supported by your state medical society and the New England schools of medicine, is now able to offer its consultation services to a selected number of community hospitals in the area without charge. The Institute will request each participating hospital to conduct self-surveys of educational resources and needs and to meet periodically with our staff consultants in your hospital. Our contract requires that these efforts take place during the summer and fall of this year. These activities will result in recommendations for development or expansion of a continuing medical education program in your hospital. It should also be noted that this activity is in concord with the Regional Medical Program objectives.

COLLABORATING AGENCIES

OSTON UNIVERSITY SCHOOL OF MEDICINE
IFTS UNIVERSITY SCHOOL OF MEDICINE
NIVERSITY OF MASSACHUSETTS MEDICAL SCHOOL
HARVARD MEDICAL SCHOOL
MASSACHUSETTS MEDICAL SOCIETY
HARVARD UNIVERSITY SCHOOL OF PUBLIC HEALTH
MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH
BINGHAM ASSOCIATES FUND
MASSACHUSETTS CHAPTER OF THE AMERICAN ACADEMY OF GENERAL PRACTICE

Since the number of participants is limited, it is urgent that you indicate on the enclosed form as soon as possible whether or not your hospital is interested and willing to receive the Institute's consultation services. Our deadline for selection of hospitals is June 26, 1967.

So that you may apprise your staff of our program, I have enclosed a copy of this letter which we suggest you forward to the president of your medical staff. We will be grateful if you discuss this with your staff and others so that you may consider the merits and potential value of the service to your institution. A reprint from the New England Journal of Medicine is also enclosed as general reference material about PMI objectives and activities.

Thank you for considering our proposal. We shall look forward to hearing from you very shortly.

Sincerely yours,

Norman Stearns

Norman S. Stearns, M.D.
Medical Director

enclosures

NS:mk

Norman S. Stearns, M.D.
Medical Director
22 The Fenway
Boston, Massachusetts 02215

Dear Dr. Stearns:

The______________________________Hospital wishes_____ (does not wish______) to invite Postgraduate Medical Institute (PMI) consultants for the purpose of discussing local problems of continuing medical education. Should PMI select our hospital for the consultation service, we suggest the following dates and times for the initial visit (please list 3)____.

We understand that PMI will contact us for purposes of arranging a mutually satisfactory date and time for the proposed meeting. Please contact (name)________________________________, (address)____, (phone number)_________________.

Sincerely yours,

APPENDIX D

LISTING OF EXPERIMENTAL AND CONTROL HOSPITALS BY CITY AND STATE - PHASE I AND PHASE II

PHASE I - PARTICIPATING HOSPITALS

	EXPERIMENTAL (CONSULTED)	LOCATION		CONTROL (NON-CONSULTED)	LOCATION
1.	Barnstable County	Pocasset, Mass.	1.	Alexander Eastman	Derry, N.H.
2.	Blue Hill Memorial	Blue Hill, Maine	2.	Athol Memorial	Athol, Mass.
3.	Cable Memorial	Ipswich, Mass.	3.	Augusta General	Augusta, Maine
4.	Cape Cod	Hyannis, Mass.	4.	Bath Memorial	Bath, Maine
5.	Cary Memorial	Caribou, Maine	5.	Bon Secours	Methuen, Mass.
6.	Central Maine General	Lewiston, Maine	6.	Brockton	Brockton, Mass.
7.	Chelsea Memorial	Chelsea, Mass.	7.	Burbank	Fitchburg, Mass.
8.	Concord	Concord, N.H.	8.	Charles Choate	Woburn, Mass.
9.	Elliot Community	Keene, N.H.	9.	Claremont	Claremont, N.H.
10.	Emerson	Concord, Mass.	10.	Clinton	Clinton, Mass.
11.	Fairview	Skowhegan, Maine	11.	Community General	Fort Fairfield, Maine
12.	Falmouth	Falmouth, Mass.	12.	Eastern Maine General	Bangor, Maine
13.	Fogarty Memorial	North Smithfield, R.I.	13.	Elizabeth Ann Seton	Waterville, Maine
14.	Franklin	Franklin, N.H.	14.	Exeter	Exeter, N.H.
15.	Franklin County Memorial	Farmington, Maine	15.	Harrington Memorial	Southbridge, Mass.
16.	Frisbie	Rochester, N.H.	16.	Henry Heywood Memorial	Gardner, Mass.
17.	A. R. Gould	Presque Isle, Maine	17.	Holyoke	Holyoke, Mass.
18.	Haverhill (Hale)	Haverhill, Mass.	18.	J.A. Taylor Osteopathic	Bangor, Maine
19.	Holden District	Holden, Mass.	19.	J.B. Thomas	Peabody, Mass.
20.	Huggins	Wolfeboro, N.H.	20.	Mary A. Alley	Marblehead, Mass.
21.	Kent County	Warwick, R.I.	21.	Mayo Memorial	Dover-Foxcraft, Maine
22.	Littleton	Littleton, N.H.	22.	Melrose-Wakefield	Melrose, Mass.
23.	Maine Coast Memorial	Ellsworth, Maine	23.	Memorial	No. Conway, N.H.
24.	Mercy	Portland, Maine	24.	Memorial	Pawtucket, R.I.
25.	Millinocket	Millinocket, Maine	25.	Milo Community	Milo, Maine
26.	Monadnock	Peterborough, N.H.	26.	Moore General	Goffstown, N.H.
27.	Osteopathic General	Cranston, R.I.	27.	Nashua Memorial	Nashua, N.H.
28.	Osteopathic of Maine	Portland, Maine	28.	Notre Dame	Central Falls, R.I.
29.	Regional Memorial	Brunswick, Maine	29.	Notre Dame de Lourdes	Manchester, N.H.
30.	St. Joseph's	Providence, R.I.	30.	Peoples Benevolent	Fort Kent, Maine
31.	St. Mary's	Lewiston, Maine	31.	Rumford Community	Rumford, Maine
32.	Salem	Salem, Mass.	32.	Sacred Heart	Manchester, N.H.
33.	Sturdy Memorial	Attleboro, Mass.	33.	St. Luke's	New Bedford, Mass.
34.	Symmes	Arlington, Mass.	34.	Sceva Speare	Plymouth, N.H.
35.	Tri-County Osteopathic	Kittery, Maine	35.	Scott Webb	Hartland, Maine
36.	Veterans Administration	Manchester, N.H.	36.	Thayer	Waterville, Maine
37.	Webber	Biddeford, Maine	37.	Tobey	Wareham, Mass.
38.	Wentworth-Douglass	Dover, N.H.	38.	Waldo County General	Belfast, Maine
39.	Wesson	Springfield, Mass.	39.	Waterville Osteopathic	Waterville, Maine
40.	Woonsocket	Woonsocket, R.I.	40.	Westerly	Westerly, R.I.

PHASE II - PARTICIPATING HOSPITALS

	EXPERIMENTAL (CONSULTED)	LOCATION		CONTROL (NON-CONSULTED)	LOCATION
1.	Barnstable County	Pocasset, Mass.	1.	Alexander Eastman	Derry, N.H.
2.	Blue Hill Memorial	Blue Hill, Maine	2.	Athol Memorial	Athol, Mass.
3.	Cable Memorial	Ipswich, Mass.	3.	Augusta General	Augusta, Maine
4.	Cape Cod	Hyannis, Mass.	4.	Bath Memorial	Bath, Maine
5.	Cary Memorial	Caribou, Maine	5.	Bon Secours	Methuen, Mass.
6.	Central Maine General	Lewiston, Maine	6.	Brockton	Brockton, Mass.
7.	Chelsea Memorial	Chelsea, Mass.	7.	Burbank	Fitchburg, Mass.
8.	Concord	Concord, N.H.	8.	Claremont	Claremont, N.H.
9.	Elliot Community	Keene, N.H.	9.	Clinton	Clinton, Mass.
10.	Emerson	Concord, Mass.	10.	Community General	Fort Fairfield, Maine
11.	Fairview	Skowhegan, Maine	11.	Eastern Maine General	Bangor, Maine
12.	Falmouth	Falmouth, Mass.	12.	Elizabeth Ann Seton	Waterville, Maine
13.	Franklin	Franklin, N.H.	13.	Exeter	Exeter, N.H.
14.	Franklin County Memorial	Farmington, Maine	14.	Harrington Memorial	Southbridge, Mass.
15.	Frisbie	Rochester, N.H.	15.	Henrietta Goodal	Sanford, Maine
16.	A. R. Gould	Presque Isle, Maine	16.	Henry Heywood Memorial	Gardner, Mass.
17.	Haverhill Municipal	Haverhill, Mass.	17.	Holyoke	Holyoke, Mass.
18.	Holden District	Holden, Mass.	18.	J.A. Taylor Osteopathic	Bangor, Maine
19.	Huggins	Wolfeboro, N.H.	19.	J.B. Thomas	Peabody, Mass.
20.	Kent County	Warwick, R.I.	20.	Mary A. Alley	Marblehead, Mass.
21.	Littleton	Littleton, N.H.	21.	Mayo Memorial	Dover-Foxcraft, Maine
22.	Maine Coast Memorial	Ellsworth, Maine	22.	Melrose-Wakefield	Melrose, Mass.
23.	Mercy	Portland, Maine	23.	Memorial	North Conway, N.H.
24.	Millinocket	Millinocket, Maine	24.	Memorial	Pawtucket, R.I.
25.	Monadnock	Peterborough, N.H.	25.	Milo Community	Milo, Maine
26.	Osteopathic General	Cranston, R.I.	26.	Moore General	Goffstown, N.H.
27.	Osteopathic of Maine	Portland, Maine	27.	Nashua Memorial	Nashua, N.H.
28.	Regional Memorial	Brunswick, Maine	28.	Newport	Newport, R.I.
29.	Rumford	Rumford, Maine	29.	Notre Dame	Central Falls, R.I.
30.	St. Joseph's	Providence, R.I.	30.	Notre Dame de Lourdes	Manchester, N.H.
31.	St. Luke's	New Bedford, Mass.	31.	Peoples Benevolent	Fort Kent, Maine
32.	St. Mary's	Lewiston, Maine	32.	Sacred Heart	Manchester, N.H.
33.	Salem	Salem, Mass.	33.	St. Luke's	Pittsfield, Mass.
34.	Sturdy Memorial	Attleboro, Mass.	34.	Sceva Speare	Plymouth, N.H.
35.	Symmes	Arlington, Mass.	35.	Scott Webb	Hartland, Maine
36.	Thayer	Waterville, Maine	36.	Sebasticook Valley	Pittsfield, Maine
37.	Tri-County Osteopathic	Kittery, Maine	37.	Tobey	Wareham, Mass.
38.	V. A. Manchester	Manchester, N.H.	38.	Waldo County General	Belfast, Maine
39.	Webber	Biddeford, Maine	39.	Waterville Osteopathic	Waterville, Maine
40.	Wentworth-Douglass	Dover, N.H.	40.	Westerly	Westerly, R.I.
41.	Wesson	Springfield, Mass.			
42.	Woonsocket	Woonsocket, R.I.			

APPENDIX E

MEDICAL EDUCATION CONSULTANTS - PHASE I AND PHASE II

PHASE I

MEDICAL EDUCATION CONSULTANTS

Daniel D. Federman, M.D.
Assistant Professor of Medicine, Harvard Medical School.

Stephen Goldfinger, M.D.
Chief Resident in Medicine, Massachusetts General Hospital.

George F. Grady, M.D.
Senior Instructor in Medicine, Tufts University, School of Medicine.

Melvin J. Krant, M.D.
Assistant Professor of Medicine, Tufts University, School of Medicine.

Morton A. Madoff, M.D.
Assistant Professor of Medicine, Tufts University, School of Medicine.

Robert P. McCombs, M.D.
Professor of Medicine, Tufts University, School of Medicine.

James C. Melby, M.D.
Associate Professor of Medicine, Boston University, School of Medicine.

Marvin L. Mitchell, M.D.
Associate Professor of Medicine, Tufts University, School of Medicine.

Louis N. Rashin, M.D.
Active Staff Member, Waltham Hospital.

George J. Robertson, M.D.
Medical Director, Bingham Associates Fund.

Henry E. Simmons, M.D.
Clinical Instructor in Medicine, Tufts University, School of Medicine.

Norman S. Stearns, M.D.
Medical Director, Postgraduate Medical Institute.

Henry S. M. Uhl, M.D.
Professor of Medical Sciences, Brown University.

PHASE II

MEDICAL EDUCATION CONSULTANTS

Thomas Durant, M.D.
Clinical Instructor, Harvard University School of Medicine.

Daniel Federman, M.D.
Assistant Dean for Continuing Education, Harvard Medical School,
Assistant Professor of Medicine, Harvard University School of Medicine.

Edward Friedman, M.D.
Instructor in Surgery, Harvard University School of Medicine.

Stephen Goldfinger, M.D.
Director of Community Programs, Department of Continuing Education, Harvard University School of Medicine.

Norman Grace, M.D.
Instructor in Medicine, Tufts University School of Medicine.

George F. Grady, M.D.
Senior Instructor in Medicine, Tufts University School of Medicine.

Melvin J. Krant, M.D.
Assistant Professor of Medicine, Tufts University School of Medicine.

Vincent Lanzoni, M.D.
Associate Professor of Pharmacology ans Assistant Professor of Medicine, Boston City Hospital.

Morton A. Madoff, M.D.
Assistant Professor of Medicine, Tufts University School of Medicine.

Barry Manuel, M.D.
Assistant Clinical Professor of Surgery, Boston University School of Medicine.

Robert P. McCombs, M.D.
Professor of Medicine, Tufts University School of Medicine.

George J. Robertson, M.D.
Assistant Professor of Medicine, Tufts University School of Medicine,
Assistant Dean for Continuing Education-Tufts University School of Medicine.

Cont'd PHASE II MEDICAL EDUCATION CONSULTANTS

Clark T. Sawin, M.D.
Assistant Professor of Medicine, Tufts University School of Medicine, Chief, Endocrine Section Medical Service, Boston V. A. Hospital.

Henry S. M. Uhl, M.D.
Professor of Medical Science at Brown University
Associate Director of Medicine
Division of Biological and Medical Sciences.

APPENDIX F

AGENDUMS AND TRAINING MATERIALS FOR CONSULTANTS', LOCAL COORDINATORS', AND EVALUATION INTERVIEWERS' ORIENTATION AND TRAINING SESSIONS
PHASE I AND PHASE II

PHASE I

POSTGRADUATE MEDICAL INSTITUTE

A SUMMARY OF AN ORIENTATION WORKSHOP, SWAMPSCOTT, MASS.

June 27, 28, 1967

Attendance

Norman S. Stearns, M.D.
George J. Robertson, M.D.
Marvin Mitchell, M.D.
Louis N. Rashin, M.D.
Henry E. Simmons, M.D.
Robert McCombs, M.D.
James Melby, M.D.
Henry S.M. Uhl, M.D.
Melvin J. Krant, M.D.
Stephen Goldfinger, M.D.

Ezra Saul, Ph.D.
Bernard Kramer, Ph.D.
Roger Cohen, Ph.D.
Mr. George Nilson
Mr. Harold Pyke
Miss Marjorie Kalberer
Mrs. Kathleen Adler
Mr. Michael Madden
Miss Barbara Davis
(Recorder)

Agenda

Monday - June 27: 1:00 - 5:00

I. Context Characterization - discussion of project setting

1. Background of contract
2. Relation of PMI to Regional Medical Program (RMP)
3. Political setup
    a. Maine-Bingham Associates Fund; RMP
    b. New Hampshire-Dartmouth
    c. Rhode Island-Brown Univ.; Rhode Is. Med. Society
    d. Massachusetts-Pittsfield; Albany
4. General schedule pattern of contract (time Chart)
5. General outline of responsibilities of staff
6. Questions and answers on material throughout discussion

II. Problems

1. Strategic issue of review of Bureau of the Budget-memo on travel policy
2. Plan for periodic check points, summary reporting
3. Study plan for evaluation
    a. Discussion of dependent and independent variables
        1) Tightening of criteria for hospital selection
        2) Tightening of criteria for matching consultants with hospitals

   - b. Deliniation of outcomes-planning of measurements
   - c. Role of evaluator during course of consultation
   - d. Behavioral consultants-categories of analysis (for evaluation team)

5:00-7:00

Free time and dinner

7:00-9:30

Consultant Briefing and Indoctrination

1. Presentation of program development techniques-(outline of procedure)
2. Review of forms
3. Discussion of scope of work (section d)
   - a. Discussion of more objective and sophisticated means of assessing need and resources, e.g., services committees.
   - b. Definition of specific educational objectives
4. Discussion of subsequent workshop with local coordinator

Wednesday, June 28

7:30-9:00

Breakfast

9:00-12:00

Continuation of Consultant Briefing

12:00-1:00

Lunch

1:00-5:00

Critique of total program by
behavioral consultants

Summary of Discussion

The workshop began at 1:30 in the afternoon. Dr. Saul opened the session with a review of the aspirations of the workshop which are to review the objectives of the Public Health Service Contract, to orient both staff and consultant personnel to their roles, to review and discuss a research design, and to make clear the consultation process. A number of key decisions must be made, for example, to arrive at a basic criteria for hospital selection, to attempt an initial assignment of consultants to various hospitals which may be selected, and to discuss variables both in the consultation process and in hospitals which may affect the contract objectives. Finally Dr. Saul mentioned that any problems pertaining to the contract for PMI's operation in any way, should be brought forth and discussed.

Dr. Stearns presented the background and development of the contract. Dr. Stearns mentioned that the study was originally designed for two years. However, it was reduced to one year by the Public Health Service so that the results of the project could be made available to other institutions in establishing similar programs throughout the country. Dr. Stearns referred to a plan of progress and discussed the various phases listed, noting especially that all recommendations had to be completed by October 31, so that there would be a four-month interval to measure the effect of the consultation process.

Dr. Stearns then discussed the relationship of the Postgraduate Medical Institute and this study to the Regional Medical Program in Maine and the Tri-State Area. He talked particularly about Dartmouth in New Hampshire and the work of Brown University and the Rhode Island Medical Society, in Rhode Island. He mentioned that a portion of Massachusetts may be closely allied to Albany Medical College and its Regional Medical Program.

To those consultants who were new to the PMI activities, Dr. Stearns mentioned that PMI hopes to develop strong community hospital ties with the major medical centers and to increase the number of people who are knowledgeable in development of physician education, both at the local level and the resource level.

Dr. Saul, asked for help in developing criteria in the selection of hospitals. He mentioned that we needed a significant sample of hospitals in the New England area; hospitals which would be a reasonably accurate cross-section of hospitals throughout the country. Following a rather lengthy discussion, the following three general categories were agreed by concensus as basic criteria for hospital selection:

First, community hospitals which were not involved in PMI educational activities; second, hospitals of varying bed size so as to reflect a national distribution; third, distance from the major medical center, Boston. Dr. Saul mentioned that one additional criterion which had not been discussed earlier was the desire of hospitals to either improve or initiate programs of continuing medical education. In order to determine this, letters inviting hospitals to participate in the project had been sent out prior to the meeting to community hospitals in Maine, Massachusetts, and Rhode Island. Letters had not been sent to New Hampshire hospitals because of a request by Dartmouth that we refrain from becoming involved within their sphere of influence until after their own hospital project pertaining to closed circuit television had gotten off the ground.

Some discussion ensued. One of the questions asked was about hospitals who are not accepted, and what we will do with them. Will we acknowledge their rejection or will we give them literature materials and no consultation, or will there be a control group. Dr. Saul suggested that there be three groups of hospitals: those who are accepted for the project, those who are not accepted, and non-respondents. Dr. Krant suggested that hospitals might be matched between those who have accepted and those who have not accepted based upon the criteria. Dr. Krant mentioned that if we want to find out if the consultation service has any impact, we need to match certain characteristics about the hospital and find which variables make a difference.

Following considerable discussion and some digression from the subject, Dr. Kramer, weighing the problem of consultation against no consultation, mentioned that it would be an expensive procedure to answer this question, and we should proceed upon the assumption that the PMI consultation is better than no consultation at all. He stated that we should put aside that question and design a comparative approach recognizing all the different activities going on in the hospital community from whatever source, i.e. the Regional Medical Program as well as PMI and whatever else might be going on in the hospital. Dr. Kramer suggested that we might compare the consultation procedures outlined by Dr. Stearns with some modification of that consultation procedure; for example, we could send out literature only to a selective number of hospitals. From this came a discussion of a need to know the possible outcomes of the consultation visits.

Dr. Kramer mentioned that not only do we need to know or be able to suggest possible outcomes, but we have to have a category of unintentional affects which may result from consultation visits. Because of the time limit of this project, of course, the extent of unintended outcomes or even intended outcomes is limited to merely the period for assessing the impact of the service (roughly from November 1 to February or march) and that further investigation of these outcomes might be a possibility for future study. Dr. Krant noted the dilemma of human behavior and said that one year was a very limited time to come up with very much. Dr. Stearns suggested that the public health service also wants to find out how PMI gets its foot in the hospital door and also wants to increase manpower familiar with development of educational programs in community hospitals.

At this point the meeting adjourned for dinner and reconvened at 8:15 p.m.

Dr. Saul began the evening session by briefly reiterating major points discussed during the afternoon session. He asked Dr. Stearns to outline the procedure for consultation. As Dr. Stearns discussed the consultation procedure in detail a number of problems arose through questions. First was the limited time, e.g. two visits, before making recommendations and that recommendation had to be completed by October 31, which seemed rather restrictive. The limited time made it very difficult for consultants to accurately assess all of the ramifications which might aid or deter the hospital from developing a program. Second problem was to what extent medical education goes; that is, what is the spectrum of possible recommendations. Do they include programs for nursing education, have anything to do with interhospital action or communications, what can be done. At this point Dr. Saul distributed a sheet listing a number of possible recommendations which the consultants could make. This list was by no means to be a definitive list of recommendations, nor were all of these recommendations expected to be made to any one hospital, at any one time; simply a guide list for the consultants.

Dr. Mitchell said that the consultants should not have a rigid format, that not all consultants will be able to project the same image to various hospitals. Dr. Saul replied that there are two explicit aspects of this consultation service which the research team needed to know: first, what materials go out with the consultants and are given to the hospital; second, for the consultants to report precisely what was discussed with hospital personnel. The key issue, said Dr. Saul, was not what the consultants should do, but simply to report, in fact, what they do do. At this point Dr. Kramer suggested a model for research design: one column which comprises those items which consultants could recommend as an ideal program for a hospital, a second column listing those items which are feasible for the hospital to undertake, a third column for those items which were actually recommended to the hospital, and fourth, a listing of the achieved results.

During the ensuing discussion, Dr. Saul reiterated that recommendations should be sufficiently explicit so that the research team will be able to make a degree of implementation by the hospital. He said that oftentimes recommendations are vague and not clearly defined.

Questions arose as to the availability of money which a hospital might spend; this might be a major factor in hospitals' implementation of programs. Dr. Stearns mentioned that if hospitals cannot afford to develop a program or implement a program, PMI will find ways to support them, and provide sources to which they could turn for financial support, for example, the Regional Medical Program.

The meeting then digressed somewhat to a discussion of motivating and developing interests within the community hospital. Dr. Stearns pointed out that each hospital needed an environment which would assist the doctors to want to become involved in education. Dr. Mitchell mentioned that from his experience there are almost always one or two on the staff who will attempt to start an educational program going, and the consultant can be a catalyst, focal point. But the consultant has to sense who these people are, and find a way of getting to them on a face to face basis.

The meeting adjourned for the day at 10:30 p.m.

On June 28, the meeting commenced at 9:00 in the morning. Mr. Pyke briefly discussed the mechanics of the contract: such items as cost reimbursment, the need to justify expenditures with adequate documentation of expenses, consultation fees and travel expenses.

Dr. Stearns then continued his discussion of the consultation process. Considerable time was spent in discussion of the consultation process and some of the details in arranging hospital visits, who the consultants should see in the hospital, how should they bill their time, and items of this nature. Dr. Stearns also discussed in detail the various forms which will be used. He mentioned that the consultants presence in the hospital means a great deal, but if it's going to be difficult for the consultant to elaborate everything that is going on, which is apparently required, it might be useful to have one member of the research team accompany the consultant on visits. This was not looked upon favorably by consultants who are new to the Institute, and who had not been to the hospitals before. The old consultants, however, felt that this might be a useful device. It was finally agreed that a member of the research team would accompany each consultant on one of his initial site visits. This person would act merely as an observer and would not in any way attempt to influence the consultation process. The question arose as to how much interaction the consultant should have with the hospital after the cut-off date, October 31. The concensus was that there should be little interaction by the consultant if possible. However, the research team recognized that there would be some which is perfectly allright as long as there is an active record of what transpired in each case.

Meeting adjourned for lunch at 12 noon.

The meeting convened at 1:15 p.m. Dr. Saul opened the session with a discussion of characteristics of hospitals which might be important to know and assess. These characteristics include age of medical staff, number of board eligible individuals, the years the hospital has existed in the community, the number of specialists on the staff, hospitals' history of participation in continuing education, its medical library and use of journals and publications. Dr. Kramer added the ratio of physicians topopulation of the community. Dr. Mitchell suggested that an important characteristic might be how many staff physicians have used outside consultants in certain cases. Also mentioned were the kinds of committees which exist in hospitals and the type of physician who chairs the committee; whether he is a member of the old guard and whether there is a strong hierarchy in the hospital staff. Distance from Boston again was mentioned as were radii from various medical schools, not just the Boston medical schools. Dr. Mitchell mentioned the kind of residency and intern programs. Dr. Rashin mentioned the presence of research projects, and how many of the staff members teach elsewhere. Dr. Stearns mentioned the type of control the hospital is under, the size of the library, the number of journal subscriptions, amount of money available in the hospital for education. Dr. Mitchell mentioned the qualifications or requirements for doctors to become members of an active staff. Dr. Kramer suggested the background of the hospital administrator might be useful to know. Also the presence or absence of other institutions of education or medicine in the community.

Dr. Saul summarized this particular session of the meeting by suggesting that the research team would develop a list of these independent variables for review.

At four p.m. the meeting adjourned with the exception of staff members and the evaluation consultants, Dr. Saul, Dr. Cohen and Dr. Kramer. The evaluation consultants and staff discussed the independent variables again, and Dr. Kramer suggested that some of the environmental attributes such as the community socio-economic status should also be considered. He suggested some resource materials which the research staff should use. Dr. Kramer also reiterated the importance of research personnel accompanying the consultants on at least one site visit; the staff should develop a list of behavioral characteristics in addition to discussion reported by the consultants to get an objective assessment of what actually happens in a consult.

Next hour was a general discussion of various means by which outcomes could be assessed, such as checking attendance records, interviewing physicians who do participate in meetings. Dr. Kramer asked if we wanted any before and after measurements to develop a base line for hospital behavior. Dr. Saul felt that this would not be required under the design as conceived at this time. Dr. Saul said that we do have some indication of before measures resulting from the questionnaires, forms which were sent out by the consultants, which do report upon the current educational activities of the hospital. We, of course, know the information which is available through American Hospital Association records and other hospital records.

Meeting adjourned at 5:00 p.m.

FORMAT FOR WRITING REPORTS OF VISITS TO CONTRACT HOSPITALS

The following sections should be included in your report of visit:

1. Title or position of hospital participants in the visit
2. Date of visit
3. Areas of discussion (who and what was said)
4. Any suggestions (informal or oral recommendations) that were made to the hospital by you (and to whom they were addressed in the hospital)
5. The social-political atmosphere of the hospital
6. The staff's attitudes or feelings toward Post Graduate Medical Institute and/or continuing education
7. Any follow-up that would be necessary for Post Graduate Medical Institute to do - or you - or the hospital as the result of your visit.

PHASE I

POSTGRADUATE MEDICAL INSTITUTE

AGENDA FOR CONSULTANT MEETING

September 12, 1967

I. Regional Medical Programs - Maine & Tri-State

II. Summary of visits - Dr. Simmons

III. Development of Local Education Coordinator for Continuous Use

IV. Use of Forms and Checklist

V. Scope of Recommendations

  A. Oral vs. written

  B. Medical vs. educational

  C. Physician vs. para-medical

  D. Explicitness of recommendations

VI. Development of Resource Material for Consultants

  A. Community hospital libraries

  B. P.A.S.

VII. Affects of Observers on Consultation Process

POSTGRADUATE MEDICAL INSTITUTE

GUIDE SHEET FOR PREPARATION OF HOSPITAL RECOMMENDATIONS

The purpose of this guide sheet is to assist you in preparing your hospital recommendations. This sheet is in no way intended to restrict either the nature or extent of recommendations you will make.

All recommendations, however, must be explicit and must reflect any oral recommendations made during the consulting sequence. Recommendations should be considered in terms of immediate goals, intermediate goals, and long-range goals.

I. Basic Considerations

A. Does the hospital have a D.M.E. or local coordinator who can be called upon to promote and develop the educational program on the local level?

B. What are the existing educational activities?

C. What other activities not considered educational by the hospital may serve education purposes, e.g., audits, tissue committee, utilization committee?

D. How many local staff physicians are available to attend education sessions? (Review staff questionnaires for D,E, and F.)

E. How many hours per month are realistically available for formal teaching sessions with attendance of 50% of the staff?

F. How many staff physicians are willing to participate as instructors, discussions leaders, etc.?

G. What about education for allied health personnel?

H. Has the hospital established a realistic budget for its educational activities?

I. What are the goals and objectives for each activity and each participant?

II. Classes of Recommendations

A. Intra-hospital

1. Group participation, e.g., rounds, conferences, guest lecturers, record review, current case audit, guest resident program. Responsibility for educational activities could be disseminated among the staff, e.g., over a 10 month basis.

2. Individual learning experiences, e.g., T.V., radio, programmed instruction, library, x-ray of the week, pathology sections of the week, films, audio digest, patient coverage for outside educational meetings and courses.

B. Inter-hospital

Translation of some of these same ideas in II.A into inter-hospital activities.

PROCEDURES AND FORMAT FOR TRANSMITTAL OF RECOMMENDATIONS

1. Mailing

   a. All recommendations should be mailed through Post Graduate Medical Institute

   b. All recommendations should be sent to:

   LOCAL COORDINATOR - original

   HOSPITAL: ADMINISTRATOR - copy

   PRESIDENT OF MEDICAL STAFF - copy

2. Format

   a. Initial paragraph should acknowledge and compliment persons involved and their activity.

   b. List EXPLICIT (detailed, specific) recommendations with explanatory statements accompanying.

   c. Recommendations should be arranged in a time sequence (Immediate, Intermediate, and Long Range) encouraging implementation of recommendations at earlier dates whenever possible.

   d. A concluding statement should thank the hospital and indicate your plan or willingness to visit the hospital for elaboration or clarification of recommendation.

PHASE I

POSTGRADUATE MEDICAL INSTITUTE

DINNER MEETING April 25, 1968
Hotel Somerset, 5:30 P.M.

AGENDA

I. Preliminary Findings of Current Activities
    A. Implementation of Recommendations - Mr. Madden
    B. Utilization of Forms and Local Resources - Miss Kalberer
    C. Procedural Problems - Mrs. Adler, Dr. Saul
II. Orientation of Contract Extension
    A. Operational Requirements - Mr. Pyke
    B. Research Considerations -Dr. Saul
    C. Consultant Commitments - Dr. Saul, Miss Kalberer
    D. Preparation for May-June Visits - Dr. Saul
III. Consultant Training and Local Coordinator Training - Dr. Saul
IV. "The Big Picture" - Dr. Stearns

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PHASE II

AGENDA

TRAINING SESSION FOR PMI MEDICAL EDUCATION CONSULTANTS AND COMMUNITY HOSPITAL EDUCATION COORDINATORS

New Ocean House, Swampscott, Mass.

June 19, 1968

8:30-12:30	Consultants
12:30-8:30	Consultants & Local Education Coordinators

TIME & ACTIVITY	PARTICIPANTS
8:30-9:15	
ORIENTATION TO DAY'S ACTIVITIES	Ezra Saul
9:15-9:45	
PHILOSOPHY OF PMI	Norman Stearns

A. Goals of Consultation Process

1. Stimulate staff to assume responsibility as a resource for education program
2. Develop community hospital physician education programs based on full utilization of local resources (including manpower and facilities) and supplemented by external inputs as needed
3. Use community hospital as a major focal point for continued medical education for M.D.

B. Common Manifestations of Goal Attainment

1. Appointment of a local coordinator
2. Provision for financial support of education program (administration, staff, other sources, e.g., drug companies, foundations)
3. Allocation of secretarial assistance and program publicity relations

TIME & ACTIVITY	PARTICIPANTS
4. Full identification of local strengths and weaknesses	
5. Maximum use of local staff as instructors	
6. Use of outside expertise to complement and supplement local resources	
7. Initiation of regularly scheduled education activities (e.g., grand rounds, medical audit, CPC, guest lectures, etc.)	
QUESTIONS AND ANSWERS FROM CONSULTANTS	
9:45-12:15	
CONSULTATION PROCEDURES	
9:45-10:15	
A. Establishment of Rapport	Ezra Saul & Medical Ed. Consultants
10:15-11:00	
B. Collection and Use of Data	Norman Stearns & Med. Ed. Consultants
11:00-11:30	
C. Recruitment of Local Participation "Force Field Analysis"	Ezra Saul
11:30-12:15	
D. Construction & Transmittal of Recommendations	
1. 1967-1968 types & numbers	Marge Kalberer
2. Core recommendations	Norman Stearns
3. "Sensitive" recommendations	Kathy Adler & Norman Stearns
4. Construction of recommendations	"
5. Report writing	"
6. Review of '69-'69 time	Harold Pyke

TIME & ACTIVITY	PARTICIPANTS
12:15-12:30	
FUTURE TRAINING SESSIONS & MIDDAY EVALUATION	Norman Stearns Marge Kalberer
12:30-2:00	
LUNCHEON Priscilla Room Consultants and Local Coordinators	
2:00-2:15	
WELCOME AND ORIENTATION TO AFTERNOON AND EVENING SCHEDULE	Ezra Saul
2:15-2:45	
REVIEW OF PMI PHILOSOPHY, PROGRAM AND CONSULTANTS	Norman Stearns
FUNCTIONS OF THE LOCAL COORDINATOR	Harold Pyke
A. Data Collection and Analysis	
B. Program Production	
C. Program Assessment	
2;45-4:15	
PRESENTATION OF 4 RESUMES OF HOSPITAL EXPERIENCES 1967-1968	Consultants & Local Coordinators
A. Establishment of Rapport	Dr. Madoff
B. Data Collection	Dr. Uhl
C. Recruitment of Local Participants	Dr. Robertson
D. Transmittal of Recommendations	Dr. McCombs
4:15-5:00	
A. Hospital as a Social System	Ezra Saul
B. Library Project	Wendy Ratcliff
C. Regional Medical Programs PL-89-239	Norman Stearns
D. Comprehensive Health Planning PL-89-749	Norman Stearns

TIME & ACTIVITY	PARTICIPANTS
5:00-5:15	
EVALUATION OF DAY (for early departees)	Ezra Saul Robert Gold
5:15-6:15	
COCKTAILS	
6:15-7:30	
DINNER	
7:30-8:30+	
GROUP DISCUSSION Question-answer period for local coordinators	Local Coordinators Consultants & PMI Staff
EVALUATION OF DAY	Ezra Saul Robert Gold

PHASE II

Postgraduate Medical Institute

EVALUATION OF TRAINING SESSION
June 19, 1968

Name: ____________________

Hospital: ____________________

Title: ____________________

I. In my role as a consultant or DME this training session was:

(Circle one)

a waste of time				very useful
1	2	3	4	5

Please explain your choice ____________________

II. The most useful part of this training session was: ____________________

III. The least useful part of this training session was: ____________________

IV. What next?

A. Anticipating my role as a consultant or DME, I need:

(Circle one)

no more training				much more training
1	2	3	4	5

B. Further training sessions should focus on:
(Please state your choices in order of preference)

1. ____________________
2. ____________________
3. ____________________
4. ____________________

V. If you were in charge of this training session how would you have altered it? ____________________

VI. Please give additional comment on the training session, including techniques and method used, length of time, location and type of facilities, effectiveness of training staff members, etc.

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PHASE II

POSTGRADUATE MEDICAL INSTITUTE

CONSULTANTS' MEETING

September 28, 1968

9:30 a.m.

Holiday Inn of Waltham

Totten Pond Road at Rte. 128
(Winter Street Exit 48 & 48E)

MORNING:

I. The Consultant and PMI

II. The Consultant and His Hospital

III. The Consultant and Allied Health Resources

AFTERNOON:

IV. The Consultant and Educational Aids

V. The Consultant and Evaluation

IV. The Consultant and Time

PHASE II

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Postgraduate Medical Institute

EVALUATION OF CONSULTANTS' MEETING
September 28, 1968

NAME____________________

I. In your role as a consultant how useful was this training session? (circle one number)

a waste of time — very useful

1 2 3 4 5

Please explain your choice____________________

II. The most useful part of this training session was:____________________

III. The least useful part of this training session was:____________________

IV. To what extent do you feel you need further training as a consultant? (circle one number)

no more training — much more training

1 2 3 4 5

V. What issues or areas would you like to focus on at future training sessions?

1.____________________
2.____________________
3.____________________
4.____________________
5.____________________
6.____________________

ADDITIONAL COMMENTS:

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PHASE II
POSTGRADUATE MEDICAL INSTITUTE
CONSULTANT - HOSPITAL COORDINATOR MEETING
November 16, 1968

AGENDA

MORNING - PMI CONSULTANTS ONLY

9:00	Arrivals:	Hot coffee and a smile from everyone.
9:30	Arrivals:	Cold coffee and a smile from Marge Kalberer. She'll love you anyway.
9:30-11:30		The Consultant and His Hospital: experience, problem and insight sharing. (Open discussion) Moderator-Marvin Mitchell, M.D. Resource Consultant-Elmer Van Egmond, Ph.D. Resource Staff-Norman Stearns, M.D. Ezra Saul, Ph.D. PMI Staff
11:30-12:00		Assessment of Morning Session

AFTERNOON - LOCAL HOSPITAL COORDINATORS AND CONSULTANTS

11:30-11:45	Registration of Local Coordinators
12:00-1:20	Lunch
1:30-2:00	PMI Core Library Development Program- Wendy Ratcliff, Program Director Charles Colby, Administrator of Countway Library of Medicine (Discussion and Questions)
2:00	The Use of Audio Visuals in Continuing Medical Education Harold Pyke, Director Continuing Education, Tufts Dental School
2:30-3:00	The Physician Learner: Principles of Continuing Education Ezra Saul, Ph.D.

3:00-3:45	Workshop: Application of Educational Resources and Principles to the Community Hospital Setting Moderators - Elmer Van Egmond, Ph.D. Ezra Saul, Ph.D.
3:45-4:00	Coffee Break
4:00-4:45	Workshops - (regrouped and continued)
4:45-5:00	Assessment of Afternoon Session
5:00-6:00	Cocktails
6:00-7:30	Dinner
7:30-9:00	The Local Coordinator and His Hospital: Experience, Problem and Insight Sharing. (Open discussion) Moderator - Elmer Van Egmond, Ph.D.

TENTATIVE SET OF PRINCIPLES TO GUIDE THE DEVELOPMENT OF COMMUNITY HOSPITAL MEDICAL EDUCATION PROGRAMS

PRINCIPLE	CLARIFICATION	LOCAL APPLICATION NOTES
LEARNING MUST BE PROBLEM-CENTERED	In order for the physician learner to get maximum benefit from an educational experience, he himself must feel that the experience deals with a problem he has - not one that the instructor feels he should have. The instructor may recognize what facts, techniques, etc. would be of most use or importance to the physician-learner, but until his insights regarding the physcians' needs are shared by them, maximum learning cannot take place.	
LEARNING MUST BE EXPERIENCE-CENTERED	Educational inputs should not be abstract, isolated or "Ivory Towerish", but should be applicable to the experiences of practicing physicians. For example, G.P.'s and specialists might be faced with the same problem but would deal with it on different levels. Therefore, their instruction should be based on, and relevant to, their individual experiences.	
LEARNING EXPERIENCES MUST BE MEANINGFUL TO THE LEARNER	The learner must see the relevance of the learning experiences to the management of his patient care problems. Therefore, the building of such "relevance" bridges should be one of the prime focuses of any continuing education program; for example, successful programs must be "useful" as well as interesting to the physician-learner.	

PRINCIPLE	CLARIFICATION	LOCAL APPLICATION NOTES
THE LEARNER MUST BE FREE TO LOOK AT THE EDUCATIONAL EXPERIENCE	An accepting, supportive atmosphere is needed among all those participating in an educational experience. Such an atmosphere will enable the doctor to openly discuss with his colleagues what he has done, what he knows, what he may have done wrong and what he may not know; e.g., the need for such an atmosphere is clearly evident if physicians are to be encouraged to use their private patients for educational experiences such as Grand Rounds.	
THE LEARNER MUST SET OR ACCEPT THE GOALS OF THE EDUCATION PROGRAM	In keeping with the principle that the problems to which an education program addresses itself should be problems for the learner, the physician-learners should participate in defining the objectives and organization of the program so as to assure its reflecting their interests and needs.	
THE PHYSICIAN-LEARNER MUST HAVE FEEDBACK ABOUT HIS PROGRAMS TOWARD HIS GOALS	In a learning situation where participation is largely based on an individual physician's self-assessment of his learning needs, it is extremely important that the education program provide him with some means of measuring his progress against his level of aspiration. That is, the education program should help the physician see the results of his efforts.	

F-6e

PHASE II

POSTGRADUATE MEDICAL INSTITUTE

ASSESSMENT OF CONSULTANT-HOSPITAL COORDINATOR MEETING

November 16, 1968

NAME______________________________

HOSPITAL______________________________

I. Please cite and explain one instance of personal learning for you today which you think you will attempt to apply in your capacity as consultant or local coordinator.

II. The most useful part of today's meeting was: (explain)

III. The least useful part of today's meeting was: (explain)

IV. What areas or topics would you like to focus on at future meetings?

1. ______________________________
2. ______________________________
3. ______________________________
4. ______________________________
5. ______________________________
6. ______________________________
7. ______________________________
8. ______________________________
9. ______________________________

PHASE II

POSTGRADUATE MEDICAL INSTITUTE

Consultant - Local Coordinator Meeting

February 1, 1969

Sheraton Motor Inn - Lexington, Massachusetts

REVISED AGENDA

		Participants
9:00 - 9:30 a.m.	Implications of Current Project - Local - National	Norman Stearns, M.D.
9:30 - 10:30	Principles of Educational Evaluation	Ezra Saul, Ph.D.
10:30 - 11:00	Medical Audit Techniques	Victor Sidel, M.D.
11:00 - 12:00	Designing Continuing Medical Education Programs	Clement Brown, M.D. Daniel Fleisher, M.D.
12:00 - 1:00 p.m.	Lunch	
1:00 - 3:00	Designing Continuing Medical Education Programs - continued	Clement Brown, M.D. Daniel Fleisher, M.D.
3:00-- 3:30	Required Resources for Educational Evaluation	Ezra Saul, Ph.D.
3:30 - 4:15	Discussion of Local Problems	Ezra Saul, Ph.D.
4:15 - 4:30	Evaluation of Day's Meeting	

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PHASE II

POSTGRADUATE MEDICAL INSTITUTE

Evaluation

CONSULTANT - HOSPITAL COORDINATOR MEETING

February 1, 1969

Name____________________

Hospital____________________

I. Please circle the number which best reflects your evaluation of today's meeting.

not useful				very useful
1	2	3	4	5

II. The most useful part of today's meeting was: (explain)

III. The least useful part of today's meeting was: (explain)

IV. Please cite and explain one instance of personal learning for you today which you think you will attempt to apply in your capacity as consultant or local coordinator.

V. What areas or topics would you like to focus on at future meetings? (Please indicate your choices in order of preference.)

1.____________________
2.____________________
3.____________________
4.____________________
5.____________________
6.____________________

F-8a

PHASE II

POSTGRADUATE MEDICAL INSTITUTE

HOSPITAL MEDICAL EDUCATION COORDINATORS MEETING

April 26, 1969

Sheraton Rolling Green Motor Inn - Route 93
Andover, Massachusetts

9:30 a.m. - 4:00 p.m.

Morning Session

Moderator: Edward Hamlin, M.D.
Director of Medical Education
St. Luke's Hospital
New Bedford, Massachusetts

9:30-11:30 RESOURCES FOR CONTINUING MEDICAL EDUCATION

Postgraduate Medical Institute	Marvin L. Mitchell, M.D. PMI Program Director
Medical Schools of the Region	
Tufts University	George Robertson, M.D. Assistant Dean for Continuing Medical Education
Dartmouth College	Dean Seibert, M.D. Assistant Dean for Regional Affairs
Boston University	Thomas Dawber, M.D. Program Planning Officer, B.U. Medical Center; Associate Professor of Medicine B.U. School of Medicine
Harvard University	Daniel Federman, M.D. Assistant Dean for Continuing Education
Brown University	(Speaker to be announce

Regional Medical Programs

Tri-State Regional Medical Program	Leona Baumgartner, M.D. Executive Director
Maine Regional Medical	Manu Chatterjee, M.D. Program Coordinator

11:30-12:15	PROFESSIONAL ACTIVITIES STUDY	
	Use of PAS-MAP to Document Educational Needs	Kenneth Teich, M.D. Ann Arbor, Michigan
12:30-1:30	LUNCHEON BREAK	

Afternoon Session

Moderator: Robert P. McCombs, M.D.
President, Postgraduate
Medical Institute

1:30-2:15	THE PROBLEM ORIENTED MEDICAL RECORD AS A BASIS FOR PHYSICIAN EDUCATION	John Bjorn, M.D. Hampden, Maine
2:15-4:00	BRIEF PRESENTATIONS AND DISCUSSIONS OF "REAL-LIFE" HOSPITAL EDUCATION ACTIVITIES AND TECHNIQUES BY HOSPITAL COORDINATORS (Specific speakers to be announced with open discussion by all present)	
4:00 p.m.	ADJOURNMENT	

F-8c

PHASE II

POSTGRADUATE MEDICAL INSTITUTE

Evaluation

HOSPITAL EDUCATION COORDINATOR MEETING

April 26, 1969

Name____________________

Hospital____________________

I. Please circle the number which best reflects your evaluation of April 26th meeting.

not useful ——————————————— very useful

1 2 3 4 5

II. The most useful part of today's meeting was: (explain)

III. The least useful part of today's meeting was: (explain)

IV. Please cite and explain one instance of personal learning for you today which you think you will attempt to apply in your capacity as consultant or local coordinator.

V. What areas or topics would you like to focus on at future meetings? (Please indicate your choice in order of preference.)

1.____________________
2.____________________
3.____________________
4.____________________
5.____________________
6.____________________

PHASE II

PMI CONSULTANT DINNER MEETING

57 Carver Street Restaurant
June 10, 1969

Agenda

5:30-6:30 Cocktails

6:30-10:00 Dinner and Business Meeting

(Moderator: Dr. Norman Stearns)

I. Final Hospital Visits

Handouts: (1) Guide for final visit
(2) Summary sheets on hospital's willingness to continue consultation.

II. Continuation of Consultation Program

III. Recommendations for Future Consultation

Discussion will focus on the following questions:

A. What changes should be made in the consultation procedure, e.g., hospital preparation, hospital commitment, consultees, data collection procedure, reporting information to PMI, etc.

B. What is "good" consultation in terms of intensity and input from the hospital's point of view?
What is "good" consultation in terms of intensity and input from the consultant's point of view?

C. How should the consultant be prepared for his role?

D. What constitutes a likely hospital candidate for successful consultation, i.e., what conditions are more likely to exist if a hospital is to effectively utilize the consultation?

E. Should there be a package of complementary services accompanying the consultation, i.e., allied health, nursing, library or other types of consultation services?

SUGGESTED CONSULTATION PROCEDURE FOR FINAL VISIT

I. Visits should be made during the summer of 1969 if possible. (Prior to the onset of the fall education program.)

II. Appointments and arrangements for the visit should be made by the consultant with the hospital. Dates of the visit should be forwarded to Marge Getchell at PMI prior to the visit.

III. Suggested areas of discussion during the visit:

A. Current state of education activities and local staff involvement.

1. Quality of present education activities. Should or can they be improved? Should they be eliminated or modified? (Check each education category, e.g., grand rounds, CPC, lectures, etc.)

2. Involvement of staff in current education activities. Has there been full or anywhere near full participation by the staff in direct teaching activities or in arranging for education activities? Who has been coming to the sessions? What has the attendance been?

3. Use of open discussion in education sessions. What specific education activities involve open discussion of current cases by several staff physicians, e.g., grand rounds, audits?

B. Identification of education needs.

1. Has any attempt been made to design education sessions relating to felt or otherwise identified needs, e.g., using PAS documented needs or tissue committee reports, etc.?

2. Would the DME or local coordinator be willing to survey the staff with regard to their simple expression of what is needed to improve care that could be fulfilled by some form of education activity for physicians (and possibly for nurses or other allied health professionals working in the hospital?)

3. Has any attempt been made to encourage development where indicated of local expertise by assignment of responsibility for patient care and education in specialty areas of medical practice to local staff members? Can this be done?

Has any attempt been made to send such individuals to medical centers for special training in order to fill local needs in terms of patient care or education.

C. Program goals and objectives for 1969-70. (Hospital should be encouraged to state these objectives in writing.)

   1. What is needed and what plans have already been made to complete the stated goals?

   2. What are possible sources of help outside of the hospital for fulfilling goals, e.g., PMI, RMP, medical schools, voluntary agencies, etc.

IV. Consultant should make a final report indicating his opinion of the hospital's progress over the past two years and noting any final recommendations for program improvement.

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Postgraduate Medical Institute

PHASE II

PHS CONTRACT - INTERVIEW MEETING

April 26, 1969

Saxon Room

Sheraton Rolling Green Motor Inn

AGENDA

I. What is PMI? (handout of activity sheet) — Marge

II. Historical & Technical Summary of Research Plan What are we going to do with data? — Ezra

III. Interviewing Situations and Problems

- A. Catholic Hospitals — Kathy
- B. Osteopathic Hospitals — Marge
  - 1. Terminology
  - 2. Dependency and defensiveness
- C. Group Interview — Ezra
- D. Impatient Physician or Interrupted Interviewer — Bob Gold
- E. Control Hospitals — Dick Carter
  - 1. Need to clarify project and PMI
  - 2. Avoid specific future commitment to PMI
- F. Handling hostility - lack of recommendations by consultants, etc.
- G. RMP relationship - refer questions — All

IV. Review sample packets — Kathy & Group

- A. Arrangement - who to call, when, etc.
- B. Interview - who to see, etc.
- C. Written Recommendations 1967-68
- D. Written Recommendations 1968-69
- E. Missing Information - to be picked up
  - 1. Hospital Attributes
  - 2. 1968-69 Education Activities Schedules
- F. Field Training and Tentative Interview Schecules
- G. Hospital Questions - Unable to interview all people, hospital which received no recommendations, etc.

V. Reprints on continuing education, hospital libraries and Osteopathic Hospitals

VI. Administrative Details — Dick Carter

- A. Expenses
- B. Voucher form
- C. Charge cards for auto and phone

CASE STUDY

Hospital A

Hospital A is a 167-bed, non-profit, community general hospital serving two adjacent suburbs of a large metropolitan city. Although it is the only hospital existing in these communities, the staff and potential patients of Hospital A have access to major medical centers 11 miles away. Hospital A is accredited by the Joint Commission on Accreditation of Hospitals and Blue Cross.

Prior to PMI consultation, September 1967, Hospital A operated with facilities and services comparable to a hospital of similar bedsize, e.g., blood bank, clinical lab, operating room, delivery room and organized hospital auxiliary. Facilities and services did not include an intensive care unit, a coronary care unit, an outpatient department or a home care program.

The active medical staff numbered 55, 28% being general practitioners; 71% specialists. The mean age was 52. Eighty-three percent of the staff were affiliated with other hospitals. The radiologist, pathologist, chief of medicine and chief of surgery were not hospital-salaried.

The hospital regularly scheduled committee meetings which dealt primarily with administrative affairs. The Credentials Committee met quarterly (January, April, June, October); the Executive, Tissue, Medical Records, Utilization Review, Pharmacy, Medicare, Library, Prenatal Mortality, Infections, Procedure, and Standardization Committees met monthly.

Hospital A also held departmental meetings in order to fulfill accreditation requirements. The departments of Surgery, Medicine, Pediatrics and Ob/Gyn met separately, once a month, to review current clinical cases on their services. Those meetings were largely clinical record reviews, with the major effort directed at quantity rather than a qualitative educational purpose. The hospital was under the impression that the Accreditation Board disallowed record reviews which primarily served educational functions. The Medical meetings, however, did include an occasional guest speaker and/or attending staff discussion.

Continuing medical education activities during 1966-67 included: four meetings covering topics of wide general interest and bi-monthly evening meetings of surgeons which dealt with criticism of patient therapy. Inter-staff consultations occurred frequently. Hospital activities did not include grand rounds, bedside rounds, x-ray conferences or clinical pathological conferences. Prior to 1966, the medical staff attempted to use inpatients for teaching rounds, but the conferences atrophied because of limited support.

Regarding a structure for continuing medical education activities, Hospital A had an Education Committee, but no appointed Director of Medical Education. A lecture hall with projection equipment was furnished, but no budget funds for educational programs and no coverage for doctors who might wish to attend such meetings were provided. Physicians and other staff members had access to a library but the library was not up-to-date and only subscribed to 3 journals. The hospital offered in-service programs for nurses and other allied health professionals but physician interest in these programs was not significant. Seventy-five percent of the medical staff specialists attended rounds, clinics or other educational activities at nearby university hospitals, yet Hospital A had no established education program in conjunction with other hospitals.

Early in September 1967, a trained PMI consultant visited Hospital A to assess the educational activities offered at the hospital and to recommend changes in and/or additional activities. The consultant met with the Assistant Administrator, Chief of Surgery, Chief of Medicine, Director of Nursing, two members of the Education Committee and several other representatives of the medical staff.

During this initial visit, the consultant left questionnaires for each medical staff member for the purpose of collecting data to aid in program development at the hospital. A summary of that data revealed that 78% of the staff were willing to attend teaching sessions, 33% to instruct, 45% to be taught by their own hospital staff members and 48% to use their own patients in teaching. This summary indicated substantial staff interest in development of an education program at Hospital A. However, noting the high percentage of doctors participating in continuing education programs elsewhere, the consultant felt there might be a reluctance to participate at one instituted by Hospital A.

Following his first visit, the consultant sent a series of recommendations to the hospital for educational program development. His recommendations were as follows:

1. The medical staff should have the program organized by a Director of Medical Education (DME).

2. Hospital A should provide adequate secretarial help to facilitate the organization and smooth development of the program.

3. Viewed on a monthly basis, the program should include the following:

    a. One full staff conference oriented to areas of mutual interest --
    Ten such conferences should occur yearly, omitting July and August. The responsibility for the programs should be rotated through various services, i.e., Medicine, Surgery, Pediatrics, Obstetrics, Gynecology, Urology, Orthopedics, Radiology, Pathology, Neurology, Dermatology.

    b. Service meetings as occur now for Medicine, Surgery, Ob/Gyn. and Pediatrics --
    In addition to the coverage of routine audit material, these meetings should serve an educational function. Individuals on each service should rotate responsibility for preparing these meetings in terms of presentation, obtaining guest speakers, etc. Encourage your radiologist and pathologist to contribute to these meetings. All staff members should recognize that no inconsistency exists between a successful medical audit and a meaningful educational activity.

    c. Service-Patient Rounds --
    The staff should see and discuss interesting problems in the hospital. Organize these rounds by services. Depending upon the attendance, service rounds should be conducted at the bedside or in a conference room with the patients brought to the group. Again, the staff should rotate responsibility for conducting these rounds. The rounds should consist of a review of the pertinent clinical problems with some discussion relating to patho-

genesis, diagnosis or therapy. Group participation should be encouraged during the rounds.

  d. One additional service meeting, the format as yet to be determined --
     Proposals for this meeting include a journal club, a clinical pathology conference, a review of deaths with presentation of pathology, and additional patient rounds. Perhaps each service should decide what would be most appropriate for this meeting. Indeed, a service might wish to vary the type of meeting initially so as to find out what is most successful.

4. Sessions described above should include the following:

  a. Kinescope material from "Boston Medical Reports" --
     The staff should show available reports at luncheon meetings. They could probably obtain the luncheon room and perhaps the Administration would provide meals for those attending. When used, these kinescopes will provide an introduction to further discussion by the physicians present.

  b. Ten to twelve speakers per year --
     Speakers should receive an average stipend of $50. The hospital in conjunction with the medical staff should pay this stipend.

5. In preparation for the Coronary Care Unit, one or more members of the Nursing Staff should enroll in a Coronary Care Monitor course within the next six months.

6. The hospital should accelerate library development, and attempt a goal of eight journals and fifteen new volumes per year.

7. Trustees of the hospital should receive a full report of the activities that have occurred to date regarding the Continuing Medical Education Program; should seek financial support at this time to support the program -- to cover guest speakers, stipends, educational materials, library development; and should consider seeking a token remuneration, i.e. a paid trip to a professional meeting, for the appointed Directors of Medical Education.

Four months later, PMI sent a professional interviewer to check the progress of the consultant's recommendations. The interviewer spoke with the Administrator, President of the Medical Staff, Surgical DME, Medical DME, and the Director of Nurses. The following recommendations had been implemented:

1. The hospital appointed both a Medical and a Surgical DME to coordinate the Continuing Medical Education Program.
2. Secretarial help was provided by the administration.
3. The topics presented at quarterly staff meetings were broadened in order to interest as many of the medical staff as possible. Responsibility for the programs was rotated through various services.
4. The Medical DME attempted to change the monthly service meetings to include an educational function in addition to the coverage of routine audit material. Each service rotated responsibility for these meetings. The pathologist and radiologist were encouraged to participate.
5. Both the Medical and the Surgical departments changed their monthly grand rounds to weekly grand rounds.
6. The hospital presented 10-12 guest speakers throughout the year. A pharmaceutical company offered funds for guest speakers to the hospital if the company approved of the speakers 60 days in advance of the program.

The PMI consultant visited Hospital A again, May 1968, to discuss further plans for the hospital's continuing medical education program with the administrator and the Medical DME. The consultant suggested that the Medical Education Committee invite a nurse to attend their meetings and that the hospital administration appoint a librarian other than the Medical DME. The consultant also offered other recommendations which he confirmed by letter in September. His recommendations were as follows:

1. The core of the Continuing Education Program will consist of meetings carried over from the previous year with minor alterations.

a. The medical service should meet monthly, at which time a guest speaker should discuss a medical topic. There should also be an occasional case presentation. Responsibility for the development of these sessions should be rotated among the medical staff.

b. Medical rounds should be held monthly. The radiologist and pathologist should be persuaded to attend these sessions.

c. The death meetings for the surgical service should occur monthly.Discussions should concentrate on management of patients and what might have been done to have improved outcomes.

d. Surgical service rounds should occur monthly. Responsibility for developing the format for these sessions should be rotated among the surgical staff.

e. The evening surgical meeting should occur bimonthly. These sessions should be regarded as a rather "knock-down-drag-out encounter" in which service problems are aired.

f. There should be a program of four evening meetings for the entire hospital staff with guest speakers.

g. The Ob-Gyn and Pediatric meeting should occur monthly.

h. The monthly medical-surgical meeting should be discontinued because of the poor attendance and the difficulty in finding suitable topics that interest both groups.

2. Two new programs should be developed during the year 1968 - 69:

   a. A medical death round should occur monthly, at which time two or three interesting deaths should be reviewed. The pathologist should attend these sessions and the Medical DME should develop the format.

   b. An in-service training program for nurses should occur weekly with contributions shared by the medical and surgical services. The program should be developed in conjunction with the Director of Nurses.

3. Accreditation of educational meetings by the Academy of General Practice should be sought. It should be clearly understood and generally publicized that this type of accreditation might be most desirable, as governmental and other influences may pass various sanctions regarding physicians' activities as based on their educational and practice background.

4. The Administrator's secretary should send the hospital's 1968-69 calendar of events to the consultant.

5. Both DME's should note which staff members support educational programs at the hospital in order to evaluate the extent to which the staff can share the development of the educational program.

6. The hospital should provide honoraria for all guest speakers. Last year, a pharmaceutical company provided honoraria for the evening speakers. Daytime speakers should also receive an honoraria of no less than $50. Seek funding, namely $1,000, from the trustees.

7. The librarian should work with the Medical DME to weed out unused journals and texts from the library and fill the library with appropriate and up-to-date material. For this purpose, PMI will send a list of suggested material. The administrator should also provide the librarian with any material that he has on library development. Five hundred dollars is needed to expand and improve the library. Request this funding from the trustees and supplement their contribution with staff dues.

8. If the pathologist needs photographic equipment to take pictures of microscopic slides for teaching purposes, request funds from the trustees.

9. In recognition of their services relating to the education program, both DME's should receive funds from the hospital for a trip to an educational meeting of their choice.

10. Both DME's should draw up and submit a formal request for all funding, except the latter, to the Board of Trustees for review and acceptance. In addition, they should present the program to the Board. If so desired, the consultant will attend the meeting to stress the importance of the program and the participation of PMI in educational

program planning at the hospital.

11. The hospital staff should pay particular attention to topics pertaining to the new intensive care unit, e.g., critical care problems, techniques and concepts.

In October, the consultant visited Hospital A to attend the first meeting in a series of newly organized death conferences. The purpose of these sessions was to present relevant and interesting cases. Attendance at this meeting was poor. Besides the consultant, only eight other doctors attended: Hospital A's two DME's, the Pathologist and his assistant, the Chief of Medicine, and the Chief of Surgery, one internist and one other surgeon. The doctors who cared for the two patients whose cases were presented at the conference did not attend. This poor attendance was not attributable to poor publicity for the Medical DME had publicized the conference via weekly newsletters, a monthly newsletter, a black board specially obtained for publication of educational programs, and an announcement made over the loudspeaker immediately preceeding the conference. No clinician discussed the cases. The pathologist had slides prepared on the cases, but no projector to show them. Instead, he used a microscope through which no one bothered to look. Although the conference was nearly disasterous, the Medical DME decided to continue with the series. It was the consultant's feeling that the Medical DME lacked the dynamism to stimulate the apathetic medical staff towards an active participation in this kind of an activity.

During his visit, the consultant inquired about acquisition of funds to support the education program. To date, the Board of Trustees had offered $500 for library development, but rejected the proposal for $1,000 to subsidize daytime speakers. The Board felt that the staff should aid in funding its own education; accordingly, the staff voted to pay $10 per man for the educational fund.

The consultant also learned that the hospital had appointed a librarian to relieve the Medical DME of library duties. He assured the new librarian of PMI's assistance in setting up an adequate collection for the medical staff and advised him concerning efficient management and maintenance of a hospital library.

Three months later, January 1969, the consultant visited Hospital A to attend one of the bi-monthly meetings of the surgical staff. The meeting was well attended, the cases well presented and the discussion afterwards well handled. The surgeons, however, had run such meetings prior to PMI consultation. The only disappointment noted by the consultant was that one of the case presenters came totally unprepared to present a subject he had volunteered to discuss.

After the meeting, the consultant learned that the Medical DME had cancelled the death conference and substituted a staff meeting on the third Friday of each month, alternately attended by the pathologist and radiologist. He also learned that the critical care unit was close to opening and suggested that the Medical DME initiate an in-service training program to coincide with the opening of the unit.

In April, the consultant re-visited Hospital A to attend one of the staff meetings which the Medical DME had scheduled in place of the death conference. Again, the meeting was well planned and presented, but it was not well attended. The speaker was a young internist whom the staff described as the "great white hope" of Hospital A. The case he delivered was a misdiagnosis, a rare but needed presentation. The presentation did not include projection of microscopic slides on the case (as the trustees had turned down the proposal to provide necessary photographic equipment) and no dialogue between speaker and attending physicians followed the lecture.

While attending the meeting, the consultant learned that the hospital had held six evening nurse education sessions on coronary care. Over 100 nurses from the surrounding communities had attended each of the sessions which included lectures, panel discussions and demonstrations. The consultant felt that this venture was probably the most successful educational enterprise undertaken by Hospital A since his consultation had begun in September 1967.

The following month, May 1969, PMI sent 2 PMI-trained interviewers to check the implementation rate of the consultant's second set of recommendations. The interviewers spoke with the Administrator, Medical DME, Chief of the Medical and the Assistant Director of Nursing. As recommended the following changes had occurred:

1. The DME's discontinued the medical-surgical meetings.

2. The Administrator's secretary sent Hospital A's 1968-69 calendar of events to the consultant.

3. The DME's noted which staff members supported the educational programs presented by the hospital and asked the pathologist and radiologist to participate more fully in all education meetings.

4. The staff and trustees provided over $500 for library development. The librarian discarded old library books, painted the outside of the library books to prevent theft, and announced to the staff the purchase of new books.

5. The DME's submitted a formal request for all funding, except the stipend for their own services, to the Board of Trustees for its review and acceptance.

6. The Education Committee sponsored nurse education lectures on coronary care.

7. The DME's publicized the education programs offered at the hospital via newsletter and bulletin board.

8. The hospital acquired projector and slide equipment for the education conferences.

The consultant visited Hospital A for the last time in August 1969. He reviewed the Hospital's education program for the past year and plans for the upcoming year with the Administrator and the Medical DME. On paper the program appeared comprehensive and well-planned. Essentially, Hospital A had developed their library facilities and a core program consisting of three educational sessions per month: a surgical meeting, a medical meeting, and Saturday morning medical rounds. The trustees had funded the library development program and the staff had established an educational fund for stipends to attending guest speakers. All efforts at a pathology, x-ray or death conference had failed. The nurse education lectures on coronary care were successful in involving nurse interest, but the hospital had not established a continuous and integrated in-service training program. Concerning future plans for educational programs at Hospital A, the consultant felt that neither the DME's nor the general staff had enough initiative or desire to add to the existing programs.

Hospital A had received consultation from PMI regarding education programs for nearly two years: September 1967 through August 1969. A trained consultant had visited the hospital six times. Twice during his visits he had offered recommendations to improve its continuing medical education program. Twice he had confirmed these recommendations by mail.

Hospital A did follow through on some of these recommendations. The hospital had appointed two DME's to coordinate its continuing medical education program. It had added educational meetings, changed previously scheduled meetings to follow an educational format, assigned a staff physician as librarian and improved both the appearance and content of the library. Moreover, they had acquired limited funding for these activities from the trustees and staff members as well as a pharmaceutical company.

In October 1968, Hospital A had entered the PMI library program, an additional result of PMI consultative efforts. A trainee was sent to attend the Library Training Institute held in Boston, February 2-7, 1969, sponsored by PMI-NERMLS (New England Regional Medical Library Service). The hospital also began acquisition of the Medical Core Library developed by PMI for physician practitioners at community hospitals.

And yet, in spite of this progression in continuing education, the consultant felt that the hospital would not further develop its education program. His conclusions were partially attributed to the following conditions:

1. Disinterested chiefs --

   Both the Chief of Surgery and the Chief of Medicine showed only mild interest in continuing education. The chiefs of staff did very little to support continuing education in his dealings with the trustees. Until chiefs of service with a more fervent interest in continuing education join the hospital staff, progress at the hospital is limited.

2. Multiple appointments of staff --

   Many staff members were committed not only to Hospital A but also to other hospitals. In looking ahead toward eventual regionalization, Hospital A needs more than three poorly attended educational meetings per month to be considered as a part of any inter-hospital program.

3. Failure of trustees to provide sufficient funds --

> Besides their interest in and initial funding of the library development project, Hospital A's trustees knew virtually nothing about and contributed nothing to the Continuing Medical Education Program at the hospital. Both the Medical DME and the Administrator should inform the Board about funds which the trustees of other hospitals allot for their hospital's educational program.

In his final report on Hospital A, the consultant wrote: "I cannot help but re-express my disappointment at the inability of the consultation process to have any real impact that I could identify. It is quite possible that the (PMI) research staff will be able to document certain changes in activities at the Hospital. Whatever may be tabulated on the positive side, however, falls very short of the real problems. Until forceful and dynamic leaders are placed in appropriate positions...rather little can be expected."

CASE STUDY

Hospital B

Hospital B is a 70-bed, municipally controlled, community general hospital. Located in an isolated rural section of New England (300 miles from the nearest medical center), the hospital serves the city and surrounding community. The hospital also influences a 60 square mile area, triangularly encompassed by itself and two other hospitals. One of the state's colleges is situated only a few miles away. The nearest medical school is over 400 miles south.

Prior to PMI consultation, August 1967, Hospital B operated with facilities and services comparable to a hospital of similar bedsize, e.g., clinical/pathology labs, operating room, out-patient department. Facilities and services included only a partial coronary care unit and x-ray department and did not include an intensive care unit, progressive care unit, social work department or rehabilitation in-patient department.

Eleven physicians (9 of whom were specialists) constituted the active medical staff. The mean age of the medical staff was forty-six. The hospital had no salaried Chiefs of Medicine or Surgery. The radiologist was part time and both the pathologist and pharmacist were hired consultants.

Scheduled medical staff meetings included monthly business meetings of the entire medical staff, monthly meetings of department heads in joint conference with the administration and the nursing supervisor, and bi-monthly meetings of the Utilization Committee. Besides these meetings, no training programs (residency, internship, externship) or continuing medical education programs (grand rounds, clinical pathological conferences, x-ray conferences) existed at Hospital B prior to PMI consultation.

The hospital did not have an adequate library nor provisions for meeting place or budgeted funds for development or implementation of an education program. Also, the hospital had not established medical education programs in conjunction with other nearby hospitals.

In August 1967, a PMI trained consultant visited Hospital B to present PMI's program to help individual community hospitals set up or improve upon existing continuing medical education programs. The consultant met with the Administrator, a staff physician, and the President of the Hospital Board. Both the Administrator and the President of the Board were interested in the Institute's program, but wondered where staff doctors,who were already very busy,would find time to participate in a new program.

The consultant pointed out that the hospital's regularly scheduled clinical and administrative activities could include an educational component. He observed that in planning an educational program at Hospital B, he, in conjunction with PMI, should consider that 1) Hospital B is a municipal hospital -- which means that all approvals of significant expenditures in changes of program must be brought up with a municipal agency, and 2) the hospital is caught in an ancient rivalry with a neighboring hospital.

One week after this initial visit, the consultant sent questionnaires to the Administrator for distribution to the entire medical staff in order to obtain data pertinent to planning a new education program. Ten staff physicians completed the questionnaires. According to a summary of that data, 90 per cent of the staff were willing to attend teaching sessions, 90 per cent to instruct, 100 per cent to be taught by their own hospital staff members and 80 per cent to use their own patients in teaching. The staff were willing to attend,on the average, 6 hours of scheduled teaching activities per month. This summary appeared to indicate substantial staff interest in the development of a continuing medical education program at Hospital B.

On Tuesday evening, October 3, the consultant attended a dinner meeting with the staff and four members of the Board of Trustees, during which he discussed their ideas for a continuing medical education program.

The staff wished to see a rotating program which included grand rounds, clinical pathological conferences, lectures by staff members or outside speakers and movies with staff discussion (omitting the months of June, July, August and September). Because of their small number and high degree of specialization, the staff believed that topics chosen for each session should interest the hospital staff in general. They also believed that they should invite nurses to attend education activities. In addition, they decided to invite physicians from a neighboring naval base to attend teaching sessions.

The trustees were willing to support the program financially. They were prepared to purchase more journals, to help with the preparation of slides, to purchase a needed projector and to investigate a proposal that the hospital allocate a portion of the cafeteria for use as a conference area and a library.

At the end of the meeting, the consultant agreed to send Hospital B a proposed program of continuing medical education on which the staff and Board of Trustees could decide. He also reminded the group that an interviewer from PMI planned to return in the late winter or early spring to follow-up on the hospital's progress.

As agreed, the consultant sent a proposed program to Hospital B at the end of October. His suggested program was as follows:

1. The Board of Trustees and the Administration should provide the environment necessary for satisfactory continuing medical education sessions. These provisions should include the following:

    a. A meeting room of adequate size --
    The hospital should not use this room exclusively for education sessions and use of the room should not conflict with other hospital activities.

    b. A room for a small medical library --
    This library should include those journals selected by a consensus of the staff. The hospital should arrange for a part-time librarian, probably a volunteer from the community, to keep these journals in order and bound once a year.

    c. A file of drawers to house records of the hospital's education programs --
    Perhaps the Administrator could keep a log of the day and date of each meeting, the topics discussed, the name or unit number of the patients reviewed and the staff member in charge of the meeting. Each chairman should record any special factors which help or hinder the educational potential of the activity; e.g., new lessons in how to plan or put on meeting; conflicts with other hospital functions.

d. Funds for support of the program --
These funds need not be large, but they should be sufficient to include mailing of notices, mimeographing of protocols for clinical pathological conferences, correspondence with and expenses for visiting lecturers and mailing of invitations.

2. The Administrator and a staff member (rotated on a monthly basis) should share responsibility for the education programs at the hospital. After some time, perhaps one person can have overall charge of the program for one year.

3. In accordance with both written and oral suggestions by the staff, the hospital should hold weekly education sessions in the daytime, preferably late in the morning. These four sessions per month (omitting June through September) should include the following, on a rotating basis:

   a. A business meeting combined with an education report from a committee --
   This meeting should consist of a 20 or 25 minute presentation and/or discussion of hospital business important to all the professional staff and a 20 or 25 minute presentation of a committee report (rotated each month) of a hospital activity related to medical care, comparing experience at this hospital with that of other hospitals as reported in the literature, evaluating results, and discussion of problems.

   b. A specialty round --
   This round should rotate in turn among each of the specialties represented at the hospital. The round should be case-oriented, with one or two live or paper cases serving as a basis for presentation of a problem from that specialty which relates to all the doctors' experience. For example, the anesthetist could discuss shock, resuscitation and assisted respiration. These topics should occur at least once a year for review.

   c. An audit or quality-care conference, and CPC's--
   These eight meetings per year should include three clinical pathological conferences

in which a staff member discusses a case protocol, the radiologist interprets the films, the pathologist presents the surgical or autopsy findings and the staff and the audience evaluates the results. Five sessions in which staff members review the management of specific illnesses should be held such as cholelithiasis, stroke and pneumonia.

d. Grand Rounds --
Again, staff members should rotate responsibility for these rounds each month and the rounds should be case-oriented. The physician in charge should present one or two cases either of in-patients or patients asked in for the conference. The discussion leader, whether he be the physician in charge or another staff member or outside speaker should prepare a review of recent literature bearing on the case.

4. The hospital should invite outside speakers approximately four times per year. On these occasions, the physician in charge that month should send the speaker a brief protocol of the case and inform him of the size of the audience, the aim of the meeting and the nature of the hospital.

5. The staff should invite the nurses to attend the continuing medical education sessions.

Allowing four months for implementation of a continuing medical education program at Hospital B, PMI sent a trained interviewer to follow-up the hospital's activities, in February 1968.

During his visit, the interviewer obtained the following information:

- The Board and administration had provided funds for continuing education programs; furnished a meeting room and space for a medical library; subscribed to journals; and provided a desk and ledger for meetings, etc.

- The following education activities were implemented:
  - Specialty rounds were implemented with a frequency expectancy of once monthly.
  - Audit conferences (using pathologist and radiologist) were established (bi-monthly)

  - Case Presentations were established (monthly)
  - Lectures were established (twice monthly)
  - Grand rounds were established (monthly)
- Nurses were invited to attend education meetings.
- Educational activities were carefully recorded indicating date, topic and number of staff and others in attendance.

The consultant visited the hospital again in August 1968. During this visit, he met with the administrator and three members of the medical staff, all of whom expressed praise and excitement regarding the medical staff education program. Since January 1968, the hospital had conducted a weekly medical staff education activity where attendance and enthusiasm had been uniformly high. (A copy of Medical Staff Education Programs - January 1968 through June 1968 may be found on page). A preference for case presentations and grand rounds had developed, resulting in a diminished number of special lectures.

Responsibility for educational sessions had been rotated by the staff on a monthly basis. This responsibility included supervision of the various education activities, specific sessions being divided among other members in informal rotation. In the month of June, the staff had had a strenuous debate concerning the continuation of education sessions over the summer. Although some of the staff were very enthusiastic, the difficulties of regularly scheduling activities during vacation months led to a discontinuance of sessions until September.

Two alterations in the nursing education program occurred as a spin-off of the physician education program: 1) staff members began rotating responsibility for presenting education material to the nurses; 2) Licensed Practical Nurses and other allied health personnel began attending the physicians' programs. Attendance by these individuals at physician activities quickly fell off. Responses to a questionnaire sent by the hospital to members of the LPN nursing staff indicated that the physicians' programs were going over their heads. As a result, 2 or 3 members of the nursing staff assumed the responsibility for conveying pertinent information from the physician sessions to LPN's and others at separate afternoon meetings. The head of the nursing staff expresses enthusiasm at this beneficial spin-off of the physician activity program.

Finally, the hospital had initiated the sponsorship of an outside lecturer from a major medical center; also shared by other hospitals within the county's medical society. The activity was well received.

The consultant felt that Hospital B had successfully implemented a continuing education program and made only two additional recommendations which were formally outlined in a letter to the administrator the following November:

1. The hospital should consider the addition of 4 outside speakers a year. Sessions should be open to neighboring hospitals who in turn might share expenses.

2. Hospital B and neighboring Hospital C should consider initiation of a "home and home" series where each hospital would put on a program utilizing its patients and staff. Also, certain laboratory and radiologic techniques used at one hospital and not the other could be demonstrated and discussed. At such a time, an outside consultant could attend to discuss case or disease mechanisms pertinent to the experience of both staffs.

The following June a PMI trained interviewer visited the hospital to check the progress of the consultant's recommendations. The hospital was continuing the activities developed the previous year, but neither of the new recommendations had been implemented although one joint conference had been held where expenses for a lecturer had been shared with Hospital C.

Organization of a medical library was an additional result of PMI consultative efforts at Hospital B. In October 1968 the hospital entered the Library Program offered by PMI (under contract with the National Library of Medicine). A trainee was sent to attend the Library Training Institute held in Boston, February 2-7, 1969, sponsored by PMI-NERMLS (New England Regional Medical Library Service). The hospital also began acquisition of the Medical Core Library developed by PMI for Physician Practitioners at community hospitals.

In total, sixty-two percent of the recommendations sent to Hospital B were fully or partially implemented eighteen months after PMI began its consultation. This success was due to the enthusiasm, cooperation and support demonstrated by the administration and medical staff. The continued rivalry between Hospital B and its neighboring hospital prevented shared programs of mutual benefit and interest, and this was the only major failure of the education program.

The administration and staff at Hospital B had implemented an education program through PMI consultation. Constructive criticism had been well received and action to improve the quality of their staff through continuing education had been eagerly undertaken. In the words of the consultant, "In general, the program appears to have been well received, and to be well launched, and encouragement along the lines they have already achieved seems to me obviously deserved."

HOSPITAL B

MEDICAL STAFF EDUCATION PROGRAM - January 4, 1968 thru June 20, 1968

Date	Topic	Attendance
January 4, 1968	Lecture	Staff Members..... 8
January 11, 1968	Grand Rounds	Staff Members......10 Others............ 5
January 18, 1968	C.P.C. #9	Staff Members.....11 Others............ 6
January 25, 1968	Presentation: Incompetent Cervical Idiopathic Thrombocytopenic Purpura	Staff Members.... 9 Others........... 7
February 1, 1968	Lecture: Cervical Disc Syndrome	Staff Members.... 10 Others........... 6
February 8, 1968	Grand Rounds	Staff Members.... 10 Others........... 4
February 15, 1968	C.P.C. #8	Staff Members.... 10 Others........... 4
February 29, 1968	Lecture	Staff Members.... 10
March 7, 1968	Case Presentation: Sarcoidosis, Hypercalcemia Perforated Viscus	Staff Members.... 8 Others........... 5
March 14, 1968	Lecture- Ovarian Tumors	Staff Members.....10 Others............ 3
March 21, 1968	Case Presentations: Meningococceminia Renal Lesion	Staff Members.....10 Others............ 8
March 28, 1968	Lecture - Angiography	Staff Members..... 9 Others............10
April 4, 1968	Grand Rounds	Staff Members.....10 Others............ 5
April 11, 1968	Lecture- Carpal Tunnel Syndrome	Staff Members.... 10 Others........... 5
April 18, 1968	All Female Hormone Day	Staff Members.... 9 Others........... 7
April 25, 1968	Case Presentation: Renal Tumor	Staff Members..... 7 Others............ 4

Date	Topic	Attendance
May 2, 1968	Case Presentation: Pediatric Fracture Review	Staff Members.....11 Others............ 7
May 9, 1968	Lecture	Staff Members..... 8 Others............ 8
May 16, 1968	Ad Lib Case Presentation	Staff Members..... 7 Others............ 4
May 23, 1968	Guest Lecturer: Internal Mammary Transplants	Staff Members.....12 Others............10
June 6, 1968	Lecture - Anticoagulation Therapy	Staff Members..... 7
June 13, 1968	Case Presentation: Hypertensive (Anemia-Uremia) Osteomyelitis - Diabetic	Staff Members..... 7 Others............ 6
June 20, 1968	C.P.C.	Staff Members..... 6 Others............ 6

APPENDIX J

IMPLEMENTATION OF RECOMMENDATIONS

PHASE I AND PHASE II

PHASE I

IMPLEMENTATION (I) AND IMPLEMENTATION PLUS PARTIAL IMPLEMENTATION (IPI) RATES OF RECOMMENDATIONS BY INDIVIDUAL HOSPITAL

Hospital	Number of Recommendations	Percent I	Percent IPI
A	12	58 %	67 %
B	14	23 %	46 %
C	10	40 %	40 %
D	15	60 %	73 %
E	15	27 %	73 %
F	1	100 %	100 %
G	16	38 %	58 %
H	8	25 %	38 %
I	2	8 %	8 %
J	9	33 %	44 %
K	7	0 %	0 %
L	12	17 %	75 %
M	6	100 %	100 %
N	13	85 %	92 %
O	23	39 %	78 %
P	1	0 %	100 %
Q	14	29 %	29 %
R	8	38 %	38 %
S	5	60 %	80 %
T	9	33 %	67 %
U	10	60%	60%
V	1	0%	0%
W	16	31%	31%
X	5	40%	80%
Y	4	25%	25%
Z	15	20%	20%
AA	16	50%	56%
BB	7	57%	100%
CC	7	0%	0%
DD	8	88%	100%
EE	7	14%	57%
FF	10	30%	70%
GG	6	50 %	100 %
HH	15	13 %	27 %
II	8	0 %	38 %
JJ	13	70 %	92 %
KK	9	55 %	89 %

Table J-2

Detailed Content Analysis and Implementation Status
of Phase I Recommendations at the end of 4 and 18 months

		4 MONTH IMPLEMENTATION				18 MONTH IMPLEMENTATION									
	TOTAL (T)	FULL IMPLEMENTATION (I)	PARTIAL IMPLEMENTATION (P)	REJECTION (R)	NO RESPONSE (NR)	CONTINUED REJECTION (R-R)	CONTINUED FULL IMPLEMENTATION (I-I)	CONTINUED PARTIAL IMPLEMENTATION (P-P)	INCREASED IMPLEMENTATION (R-P)	INCREASED IMPLEMENTATION (R-I)	INCREASED IMPLEMENTATION (P-I)	ATTRITION (I-P)	ATTRITION (I-R)	ATTRITION (P-R)	NO RESPONSE (NR)
TOTAL NUMBER OF RECOMMENDATIONS	353	130	69	151	3	74	96	5	1	64	40	4	26	24	19
I. EDUCATIONAL RECOMMENDATIONS	318	118	64	133	3	64	90	4	1	59	38	3	20	22	17
A. PHYSICIAN EDUCATION RECOMMENDATIONS	296	109	60	124	3	58	81	4	1	58	37	3	20	17	15
1. EDUCATIONAL PROGRAM RESOURCES	140	46	33	60	1	30	32	2		25	25	1	11	6	8
a. Financial Support for Program Development, including Hospital, Staff, and Other Sources	24	7	8	9		5	4	1		4	6		3	1	
(1) Hospital provide funds, e.g., obtain funds from administration to match funds donated by staff to the library	4	1		3		1	1			2					
(2) Establish budget for education, e.g., establish education funds, usually 1% of gross income	11	3	5	3		1	1	1		2	4		2		
(3) Staff contribute monetarily, e.g., finances for education program would come from staff	1		1								1				
(4) Obtain funds from other sources, such as drug houses, ladies auxiliary, BMP	1	1											1		
(5) Salary DME	4	2	1	1		1	2				1				
(6) Provide incentive pay for physicians, e.g., pay physicians for attendance at distant meetings	3		1	2		2								1	
b. Educational Facilities and Materials, including Audio-Visual Aids and Library Provisions	27	9	5	12	1	6	5	1		5	3	1	3	1	2
(1) Utilize BMR, e.g., show taped tv program of BMR possibly at lunch	2			2		2									
(2) Provide programmed instructions, e.g., provide teaching machine	1			1						1					
(3) Provide audio-digest with tape recorders	3	1		2		1						1			1
(4) Develop the library	1	1					1								
(5) Enlarge the library collection, e.g., obtain reference texts for the library	7	2	3	2			2			2	2			1	

(cont'd Table J-2)

Detailed Content Analysis and Implementation Status
of Phase I Recommendations at the end of 4 and 18 months

		4 MONTH IMPLEMENTATION				18 MONTH IMPLEMENTATION									
	TOTAL (T)	FULL IMPLEMENTATION (I)	PARTIAL IMPLEMENTATION (P)	REJECTION (R)	NO RESPONSE (NR)	CONTINUED REJECTION (R-R)	CONTINUED FULL IMPLEMENTATION (I-I)	CONTINUED PARTIAL IMPLEMENTATION (P-P)	INCREASED IMPLEMENTATION (R-P)	INCREASED IMPLEMENTATION (R-I)	INCREASED IMPLEMENTATION (P-I)	ATTRITION (I-P)	ATTRITION (I-R)	ATTRITION (P-R)	NO RESPONSE (NR)
(6) Index and bind journals, e.g., bind journals yearly	1	1					1								
(7) Reorganize library, e.g., separate library from conference room and lounge	3	2		1			1			1			1		
(8) Provide space for library	4	1	2		1			1			1		1		1
(9) Provide meeting room and equipment, e.g., board and administration provide meeting room	4	1		3		2				1			1		
(10) Implement Core Library	1			1		1									
c. Hospital Personnel including DME, Pathologist, Secretaries and Librarian	24	11	3	10		4	7			3	3		2		5
(1) Create and define position of DME, e.g., appoint DME: DME position should be supported by medical staff and Board of Trustees, rotate DME responsibility	13	6	1	6		4	6			1	1				1
(2) Pathologist and radiologist participate in the education program	2	1		1						1					1
(3) Provide librarian, full or part time	3		2	1						1	2				
(4) Provide secretarial assistance to the program	4	3		1			1						2		1
(5) Establish education committee or other supporting committee to assist in program development	2	1		1											2
d. External Educational Resources, including Education Agencies, Visiting Consultants, and Outside Speakers	44	14	10	20		8	12			11	7		2	3	1
(1) Utilize PMI, e.g., maintain close liason with PMI to make guest speakers available	10	3	4	3			2			3	2		1	2	
(2) Utilize RMP, e.g., ask RMP to speak to staff re: its activities and purposes	2	1		1			1			1					
(3) Utilize universities or academic institutions for progra development, e.g., contact dean of one or more medical schools to discuss potential affiliation	7	1	1	5		4	1			1	1				
(4) Utilize miscellaneous resources, e.g., other hospitals and Countway Library	4	1	1	2		1					1		1		1
(5) Establish visiting consultant program	5		1	4						4	1				
(6) Utilize outside speakers, e.g., strengthen present progra by using visiting faculty	16	8	3	5		3	8			2	2			1	

(cont'd Table J-2)

Detailed Content Analysis and Implementation Status
of Phase I Recommendations at the end of 4 and 18 months

	TOTAL (T)	4 MONTH IMPLEMENTATION				18 MONTH IMPLEMENTATION									
		FULL IMPLEMENTATION (I)	PARTIAL IMPLEMENTATION (P)	REJECTION (R)	NO RESPONSE (NR)	CONTINUED REJECTION (R-R)	CONTINUED FULL IMPLEMENTATION (I-I)	CONTINUED PARTIAL IMPLEMENTATION (P-P)	INCREASED IMPLEMENTATION (R-P)	INCREASED IMPLEMENTATION (R-I)	INCREASED IMPLEMENTATION (P-I)	ATTRITION (I-P)	ATTRITION (I-R)	ATTRITION (P-R)	NO RESPONSE (NR)
e. Regional Interhospital Collaboration, including DME, Funds, Lectures and Teaching Personnel	21	5	7	9		7	4			2	6		1	1	
(1) Share funding for education program	0														
(2) Share DME	1			1		1									
(3) Share educational facilities, e.g., study possibility of closed circuit tv, linking several hospitals	2	1		1		1							1		
(4) Share education program, e.g., establish pediatric grand rounds with neighboring hospital	11	2	5	4		2	2			2	4			1	
(5) Share pathologist and/or radiologist for teaching purposes	3	2		1		1	2								
(6) Share lecturers	0														
(7) Coordinate education program with other hospitals in area, e.g., establish inter-hospital coordinating committee -	4		2	2		2					2				
2. EDUCATIONAL PROGRAM PLANNING	62	21	11	29	1	12	20	1	1	16	6			4	2
a. Program Assessment including Evaluation of Programs, Staff Needs and Interests, and Community Needs	7	2	1	4		3	2			1	1				
(1) Evaluate education programs, e.g., investigate whether attendance is best measure of success	1		1								1				
(2) Assess staff needs, interests and educational goals, e.g. education committee examine interests of each staff member use PAS-MAP to identify staff education needs	4	1		3		2	1			1					
(3) Assess educational needs of the community and region	2	1		1		1	1								
(4) Accredit education program	0														
b. Program Design including Educational Goals, Structuring of Activities, and Rotating Responsibility for Educational Planning and Implementation among Staff	32	11	8	13		5	10		1	7	4			4	1
(1) Outline and review hospital education goals, objectives and education recommendations	8	4	2	2			4		1	1				2	
(2) Design program for specific target groups, e.g., plan a review course for general practitioners	2	1		1			1			1					
(3) Restructure education program, e.g., time of education meeting be reviewed	9	2	2	5		3	1			2	1			1	1
(4) Involve and inform trustees educationally	0														

(cont'd Table J-2)

Detailed Content Analysis and Implementation Status of Phase I Recommendations at the end of 4 and 18 months

		4 MONTH IMPLEMENTATION				18 MONTH IMPLEMENTATION									
	TOTAL (T)	FULL IMPLEMENTATION (I)	PARTIAL IMPLEMENTATION (P)	REJECTION (R)	NO RESPONSE (NR)	CONTINUED REJECTION (R-R)	CONTINUED FULL IMPLEMENTATION (I-I)	CONTINUED PARTIAL IMPLEMENTATION (P-P)	INCREASED IMPLEMENTATION (R-P)	INCREASED IMPLEMENTATION (R-I)	INCREASED IMPLEMENTATION (P-I)	ATTRITION (I-P)	ATTRITION (I-R)	ATTRITION (P-R)	NO RESPONSE (NR)
(5) Share and rotate staff responsibility for education program planning and presentation, e.g., seek more active participation by members of staff	9	3	2	4		1	3			3	2				
(6) Make attendance mandatory, e.g., review by-laws, staff decide measure for attendance	4	1	2	1		1	1				1			1	
(7) Provide coverage system to allow physicians to attend education meetings	0														
c. Scheduling and Attendance of Educational Programs, including Preparation and Publicity of Programs, and Keeping Attendance and Minutes of Meetings	23	8	2	12	1	4	8	1		8	1				1
(1) Schedule activities on regular basis, e.g., hold medical conference weekly	7	2	2	3		1	2	1		2	1				
(2) Prepare and arrange sessions well in advance, e.g., set up education program six months in advance	5	2		3			2			3					
(3) Publicize and post announcements, e.g., post topics on bulletin board, publicize new library acquisitions	6	1		4	1	2	1			2					1
(4) Invite other physicians from community, e.g., invite local medical practitioners	1	1					1								
(5) Keep diary of meetings, e.g., log all educational conferences and committee meetings	4	2		2		1	2			1					
(6) Keep attendance	0														
3. EDUCATIONAL PROGRAM IMPLEMENTATION	94	42	16	35	1	16	29	1		17	6	2	9	9	5
a. Patient or Case Centered Education Activities, including Grand Rounds, CPC's, Case Presentations, and Case Literature Review	52	24	9	19		9	17			10	3	1	5	6	1
(1) Establish Grand Rounds	11	5	1	5		4	5			1	1				
(2) Establish specialty rounds	3	2		1		1	2								
(3) Establish CPC	2	2					1						1		
(4) Establish bedside rounds	4	1	1	2		1				1			1	1	
(5) Establish case presentation and patient oriented conferenc	5	2	2	1			2			1				2	
(6) Establish mortailty conference	5	2	2	1			2			1	1			1	
(7) Establish x-ray conference	0														
(8) Establish medical audit	6	2	1	3		1	2			2				1	

(cont'd Table J-2)

Detailed Content Analysis and Implementation Status of Phase I Recommendations at the end of 4 and 18 months

		4 MONTH IMPLEMENTATION				18 MONTH IMPLEMENTATION									
	TOTAL (T)	FULL IMPLEMENTATION (I)	PARTIAL IMPLEMENTATION (P)	REJECTION (R)	NO RESPONSE (NR)	CONTINUED REJECTION (R-R)	CONTINUED FULL IMPLEMENTATION (I-I)	CONTINUED PARTIAL IMPLEMENTATION (P-P)	INCREASED IMPLEMENTATION (R-P)	INCREASED IMPLEMENTATION (R-I)	INCREASED IMPLEMENTATION (P-I)	ATTRITION (I-P)	ATTRITION (I-R)	ATTRITION (P-R)	NO RESPONSE (NR)
(9) Provide x-ray, pathology specimen or EKG exhibit, e.g., exhibit x-ray of the week with invited diagnosis	5	1	1	3		1				2			1	1	
(10) Attending physician present case	2	2											1		1
(11) Utilize private patients, e.g., expand teaching ward	4	3		1			2			1			1		
(12) Review literature, e.g., physician presenting the case present a brief review of the pertinent literature	5	2	1	2		1	1			1	1	1			
b. Subject-oriented Education Activities, including Courses and Lecture Programs, Discussion Groups, and Specialty-care Education Programs	18	7	4	7		4	3	1		2	2	1	2	1	2
(1) Establish courses, e.g., plan consecutive courses	2		1	1				1		1					
(2) Establish lecture and conference programs	7	1	2	4		3				1	1		1	1	
(3) Establish journal discussion groups	0														
(4) Establish program based on specialty care services, e.g., ICU, CCU, ER, Inhalation Therapy	3	3					2								1
(5) Institute programs base' on disease entities	6	3	1	2		1	1				1	1	1		1
c. Routine Hospital Meetings (Business and Committee) and the Education Program	8	4	2	2			3			2	1		1	1	
(1) Use committee meetings (Utilization, Tissue) for education purposes	6	3	1	2			2			2	1		1		
(2) Separate education from business, e.g., scientific meetings separate from staff meetings	2	1	1				1							1	
d. House Officer Training, including Resident and Intern Training	11	6	1	3	1	1	5			2			1	1	1
(1) Develop intern and/or resident training program	5	3		2		1	3			1					
(2) Establish Guest Residency Program	6	3	1	1	1		2			1			1	1	1
e. Miscellaneous Education Programs, including Self-assessment Tests and Sending Physicians Out for Postgraduate Training	5	1		4		2	1			1					1
(1) Participate in self-assessment test	0														
(2) Send physicians out for postgraduate training, e.g., cardiologist should get some training in maintaining techniques for use in ICU	5	1		4		2	1			1					1

(cont'd Table J-2)

Detailed Content Analysis and Implementation Status of Phase I Recommendations at the end of 4 and 18 months

		4 MONTH IMPLEMENTATION				18 MONTH IMPLEMENTATION									
	TOTAL (T)	FULL IMPLEMENTATION (I)	PARTIAL IMPLEMENTATION (P)	REJECTION (R)	NO RESPONSE (NR)	CONTINUED REJECTION (R-R)	CONTINUED FULL IMPLEMENTATION (I-I)	CONTINUED PARTIAL IMPLEMENTATION (P-P)	INCREASED IMPLEMENTATION (R-P)	INCREASED IMPLEMENTATION (R-I)	INCREASED IMPLEMENTATION (P-I)	ATTRITION (I-P)	ATTRITION (I-R)	ATTRITION (P-R)	NO RESPONSE (NR)
B. NURSING AND ALLIED HEALTH RECOMMENDATIONS	22	9	4	9		6	9			1	1			3	2
1. RESOURCES, including Director of In-service Teaching, Visiting Nurse Consultants, and Inter-hospital Director of Nursing	6	1	2	3		3	1							2	
a. Appoint Director of Nursing Education, e.g., appoint a full-time director of in-service teaching	1		1											1	
b. Utilize Outside Resources, e.g., establish visiting nurse consultant program	4	1	1	2		2	1							1	
c. Share Education Resources, Planning, and Programs with Other Hospitals, e.g., share director of nursing with other hospital	1			1		1									
2. JOINT PHYSICIAN-NURSE EDUCATION ACTIVITIES, including Mutual Physician-Nurse Planning and Programs	13	7	2	4		3	7				1			1	1
a. Invite Nurses to Physician Education Programs	10	5	2	3		3	5				1			1	
b. Physicians and Nurses Have Joint Conference to Explore Total Nature of Disease, e.g., organize special lectures and demonstrations relating to ICU for physicians and nurses	3	2		1			2								1
3. ESTABLISHMENT OF IN-SERVICE EDUCATION, including Teaching of Nurses by Medical Staff and Programs for Paramedical Personnel	3	1		2			1			1					1
a. Medical Staff Rotate Responsibility for Teaching of Nurses	2	1		1			1								1
b. Establish In-service Education for Nurses, e.g., establish a monthly medical teaching conference for nursing staff	1			1						1					
c. Organize Education Program for Paramedical Personnel around ICU-CCU, e.g., teach cardiac resusitation by professional physician and nursing staff to aid personnel stationed on the ICU	0														
II. NON-EDUCATION RECOMMENDATIONS, including Making Wider Use of Emergency Room, Establishing Clinics, Establishing Full or Partially Paid Department Chiefs, Developing Plans Relating to Regional Services	35	12	5	18		10	6	1		5	2	1	6	2	2

Table J-3

Phase II Recommendations

Detailed Content Analysis and Implementation Status

	TOTAL (T)	FULL IMPLEMENTATION (I)	PARTIAL IMPLEMENTATION (P)	REJECTION (R)	NO RESPONSE (NR)
TOTAL NUMBER OF RECOMMENDATIONS	295	71	19	103	2
I. EDUCATIONAL RECOMMENDATIONS	278	56	18	102	2
A. PHYSICIAN EDUCATION RECOMMENDATIONS	270	53	18	97	2
1. EDUCATIONAL PROGRAM RESOURCES	117	63	4	50	
a. Financial Support for Program Development, including Hospital, Staff, and Other Sources	26	15	1	10	
(1) Hospital provide funds, e.g., obtain funds from administration to match funds donated by staff to the library	13	6	1	6	
(2) Establish budget for education, e.g., establish education funds, usually 1% of gross income	3	2		1	
(3) Staff contribute monetarily, e.g., finances for education program would come from staff	3	2		1	
(4) Obtain funds from other sources, such as drug houses, ladies auxiliary, RMP	4	3		1	
(5) Salary DME	3	2		1	
(6) Provide incentive pay for physicians, e.g., pay physicians for attendance at distant meetings					
b. Educational Facilities and Materials, including Audio-Visual Aids and Library Provisions	13	10		3	
(1) Utilize BMR, e.g., show taped tv program of BMR possibly at lunch					
(2) Provide programmed instructions, e.g., provide teaching machine					
(3) Provide audio-digest with tape recorders					
(4) Develop the library	2	1		1	
(5) Enlarge the library collection, e.g., obtain reference texts for the library	4	3		1	

(cont'd Table J-3)

Phase II Recommendations

Detailed Content Analysis and Implementation Status

		TOTAL (T)	FULL IMPLEMENTATION (F)	PARTIAL IMPLEMENTATION (P)	REJECTION (R)	NO RESPONSE (NR)
(6)	Index and bind journals, e.g., bind journals yearly	1	1			
(7)	Reorganize library, e.g., separate library from conference room and lounge					
(8)	Provide space for library					
(9)	Provide meeting room and equipment, e.g., board and administration provide meeting room	1	1			
(10)	Implement Core Library	5	4		1	
c.	Hospital Personnel including DME, Pathologist, Secretaries and Librarian	32	21	1	10	
(1)	Create and define position of DME, e.g., appoint DME: DME position should be supported by medical staff and Board of Trustees, rotate DME responsibility	11	7	1	3	
(2)	Pathologist and radiologist participate in the education program					
(3)	Provide librarian, full or part time	3	2		1	
(4)	Provide secretarial assistance to the program	10	5		5	
(5)	Establish education committee or other supporting committee to assist in program development	8	7		1	
d.	External Educational Resources, including Education Agencies, Visiting Consultants, and Outside Speakers	29	16		13	
(1)	Utilize PMI, e.g., maintain close liason with PMI to make guest speakers available	4	1		3	
(2)	Utilize RMP, e.g., ask RMP to speak to staff re: its activities and purposes					
(3)	Utilize universities or academic institutions for program development, e.g., contact dean of one or more medical schools to discuss potential affiliation	1			1	
(4)	Utilize miscellaneous resources, e.g., other hospitals and Countway Library	7	3		4	
(5)	Establish visiting consultant program	9	9			
(6)	Utilize outside speakers, e.g., strengthen present program by using visiting faculty	8	3		5	

(cont'd Table J-3)

Phase II Recommendations

Detailed Content Analysis and Implementation Status

	TOTAL (T)	FULL IMPLEMENTATION (I)	PARTIAL IMPLEMENTATION (P)	REJECTION (R)	NO RESPONSE (NR)
e. Regional Interhospital Collaboration, including DME, Funds, Lectures and Teaching Personnel	17	1	2	14	
(1) Share funding for education program	1		1		
(2) Share DME					
(3) Share educational facilities, e.g., study possibility of closed circuit tv, linking several hospitals	2			2	
(4) Share education program, e.g., establish pediatric grand rounds with neighboring hospital	8			8	
(5) Share pathologist and/or radiologist for teaching purposes					
(6) Share lecturers	1	1			
(7) Coordinate education program with other hospitals in area, e.g., establish inter-hospital coordinating committee	5		1	4	
2. EDUCATIONAL PROGRAM PLANNING	80	43	11	25	1
a. Program Assessment including Evaluation of Programs, Staff Needs and Interests, and Community Needs	25	14	5	6	
(1) Evaluate education programs, e.g., investigate whether attendance is best measure of success	5	3	1	1	
(2) Assess staff needs, interests and educational goals, e.g., education committee examine interests of each staff member use PAS-MAP to identify staff education needs	18	11	4	3	
(3) Assess educational needs of the community and region	1			1	
(4) Accredit education program	1			1	
b. Program Design including Educational Goals, Structuring of Activities, and Rotating Responsibility for Educational Planning and Implementation among Staff	38	17	3	17	1
(1) Outline and review hospital education goals, objectives and education recommendations	9	6	1	2	
(2) Design program for specific target groups, e.g., plan a review course for general practitioners	1	1			
(3) Restructure education program, e.g., time of education meeting be reviewed	2	1			1
(4) Involve and inform trustees educationally	3			3	

(cont'd Table J-3)

Phase II Recommendations

Detailed Content Analysis and Implementation Status

	TOTAL (T)	FULL IMPLEMENTATION (I)	PARTIAL IMPLEMENTATION (P)	REJECTION (R)	NO RESPONSE (NR)
(5) Share and rotate staff responsibility for education program planning and presentation, e.g., seek more active participation by members of staff	17	7	2	8	
(6) Make attendance mandatory, e.g., review by-laws, staff decide measure for attendance	5	1		4	
(7) Provide coverage system to allow physicians to attend education meetings	1	1			
c. Scheduling and Attendance of Educational Programs, including Preparation and Publicity of Programs, and Keeping Attendance and Minutes of Meetings	17	12	3	2	
(1) Schedule activities on regular basis, e.g., hold medical conference weekly					
(2) Prepare and arrange sessions well in advance, e.g., set up education program six months in advance	7	6	1		
(3) Publicize and post announcements, e.g., post topics on bulletin board, publicize new library acquisitions	5	2	1	2	
(4) Invite other physicians from community, e.g., invite local medical practitioners	1	1			
(5) Keep diary of meetings, e.g., log all educational conferences and committee meetings	2	1	1		
(6) Keep attendance	2	2			
3. EDUCATIONAL PROGRAM IMPLEMENTATION	73	47	3	22	1
a. Patient or Case Centered Education Activities, including Grand Rounds, CPC's, Case Presentations, and Case Literature Review	36	26	1	9	
(1) Establish Grand Rounds	3	2		1	
(2) Establish specialty rounds	1	1			
(3) Establish CPC	2	1	1		
(4) Establish bedside rounds	1	1			
(5) Establish case presentation and patient oriented conference	5	5			
(6) Establish mortality conference	2	1		1	
(7) Establish x-ray conference	2	1		1	
(8) Establish medical audit	4	3		1	

(cont'd Table J-3)

Phase II Recommendations

Detailed Content Analysis and Implementation Status

		TOTAL (T)	FULL IMPLEMENTATION (I)	PARTIAL IMPLEMENTATION (P)	REJECTION (R)	NO RESPONSE (NR)
(9)	Provide x-ray, pathology specimen or EKG exhibit, e.g., exhibit x-ray of the week with invited diagnosis					
(10)	Attending physician present case	1	1			
(11)	Utilize private patients, e.g., expand teaching ward	8	5		3	
(12)	Review literature, e.g., physician presenting the case present a brief review of the pertinent literature	7	5		2	
b.	Subject-oriented Education Activities, including Courses and Lecture Programs, Discussion Groups, and Specialty-care Education Programs	16	9		7	
(1)	Establish courses, e.g., plan consecutive courses	4	2		2	
(2)	Establish lecture and conference programs	8	4		4	
(3)	Establish journal discussion groups	1	1			
(4)	Establish program based on specialty care services, e.g., ICU, CCU, ER, Inhalation Therapy	3	2		1	
(5)	Institute programs based on disease entities					
c.	Routine Hospital Meetings (Business and Committee) and the Education Program	12	8		4	
(1)	Use committee meetings (Utilization, Tissue) for education purposes	11	7		4	
(2)	Separate education from business, e.g., scientific meetings separate from staff meetings	1	1			
d.	House Officer Training, including Resident and Intern Training	4	3	1		
(1)	Develop intern and/or resident training program	3	2	1		
(2)	Establish Guest Residency Program	1	1			
e.	Miscellaneous Education Programs, including Self-assessment Tests and Sending Physicians Out for Postgraduate Training	5	1	1	2	1
(1)	Participate in self-assessment test	2		1		1
(2)	Send physicians out for postgraduate training, e.g., cardiologist should get some training in maintaining techniques for use in ICU	3	1		2	

(cont'd Table J-3)

Phase II Recommendations

Detailed Content Analysis and Implementation Status

	TOTAL (T)	FULL IMPLEMENTATION (I)	PARTIAL IMPLEMENTATION (P)	REJECTION (R)	NO RESPONSE (NR)
B. NURSING AND ALLIED HEALTH RECOMMENDATIONS	8	3		5	
1. RESOURCES, including Director of In-service Teaching, Visiting Nurse Consultants, and Inter-hospital Director of Nursing	4	1		3	
a. Appoint Director of Nursing Education, e.g., appoint a full-time director of in-service teaching					
b. Utilize Outside Resources, e.g., establish visiting nurse consultant program	3	1		2	
c. Share Education Resources, Planning, and Programs with Other Hospitals, e.g., share director of nursing with other hospital	1	1			
2. JOINT PHYSICIAN-NURSE EDUCATION ACTIVITIES, including Mutual Physician-Nurse Planning and Programs	2	1		1	
a. Invite Nurses to Physician Education Programs					
b. Physicians and Nurses Have Joint Conference to Explore Total Nature of Disease, e.g., organize special lectures and demonstrations relating to ICU for physicians and nurses	2	1		1	
3. ESTABLISHMENT OF IN-SERVICE EDUCATION, including Teaching of Nurses by Medical Staff and Programs for Paramedical Personnel	2	1		1	
a. Medical Staff Rotate Responsibility for Teaching of Nurses	1			1	
b. Establish In-service Education for Nurses, e.g., establish a monthly medical teaching conference for nursing staff					
c. Organize Education Program for Paramedical Personnel around ICU-CCU, e.g., teach cardiac resusitation by professional physician and nursing staff to aid personnel stationed on the ICU	1	1			
II. NON-EDUCATION RECOMMENDATIONS, including Making Wider Use of Emergency Room, Establishing Clinics, Establishing Full or Partially Paid Department Chiefs, Developing Plans Relating to Regional Services	17	15	1	1	

APPENDIX K

CRITERIA FOR CONTENT CLASSIFICATION OF PHASE II HOSPITAL CHANGES

CRITERIA FOR CONTENT CLASSIFICATION OF HOSPITAL CHANGES

I. EDUCATION

A. Physician education changes include implementation or modification of:

1. medical audits
2. tumor conferences
3. clinical pathological conferences
4. grand rounds
5. physicians going outside of the hospital for education
6. position of Director of Medical Education
7. PMI or RMP programs for physicians

B. Nursing education changes include implementation or modification of:

1. in-service education
2. licensed practical nurse education
3. nursing audits
4. nurses going outside of the hospital for education, i.e., ICU-CCU courses
5. house physicians training nurses
6. position of Director of In-Service Education

C. Allied health professions (lab technicians, occupational therpasits, physical therapists, dieticians, radiological technicians) education changes include implementation or modification of:

1. in-service education
2. individuals going outside of the hospital for education

D. Other education changes include implementation or modification of:

1. education programs not specifically designated for any target group, e.g., "now training for ICU-CCU"
2. education programs for:
    a. community
    b. nurses aides
    c. orderlies
    d. maintenance staff
    e. kitchen staff
    f. police department
    g. fire department
    h. pregnant women
    i. unwed mothers
    j. librarians

E. Facilities and services education changes include implementation or modification of:

1. audio-visual mechanisms
2. library

II. PERSONNEL

A. Physician[*] personnel changes refer to:

1. additional physicians (part time, full time, and consultants)
2. replacements of physicians (part time, full time, and consultants)
3. other includes:
    a. N.C. (no classification) indicate that there has been a physician personnel change, but there was no response to the classification of either addition or replacement.
    b. deletion refers to physician personnel deletion due to retirement, death, or elimination of position

B. Other personnel changes refer to the remainder of the hospital staff exclusive of physicians

1. additional personnel (part time, full time, and consultants)
2. replacement of personnel (part time, full time, and consultants)
3. other includes:
    a. N.C. (no classification) indicate that there has been a personnel change, but there was no response to the classification of either addition or replacement
    b. deletion refers to personnel deletion due to the elimination of position, death, retirement

III. EQUIPMENT CHANGES (exclusive of normal changes in equipment and supplies used for daily hospital care, e.g., Foley Catheters, suture sets, syringes, medications, and linen)

A. Added equipment includes any recognized change in equipment throughout the hospital, e.g., beds, lab equipment, radiological equipment, crash carts, and changes to prepared sterile supplies, surgery equipment, maintenance equipment.
B. Replacement equipment (refer to Equipment A)
C. N.C. (no classification) indicates a noted change in equipment but not categorized into either added or replacement of equipment A.

---

[*] Note: Each physician change received an individual classification.

IV. PHYSICAL PLANT changes refer to:

- A. New buildings
- B. Raising of buildings
- C. Changing of location of walls
- D. Renovations
- E. New plumbing, sprinkler or electrical installations
- F. New wing
- G. New piped in oxygen which required renovation

V. SPECIALTY AREA changes. Inclusive for all of the following areas are changes concerning the opening or closing of units, establishment or elimination of departments, changes in the budget, changes in personnel, changes in equipment (additional or replacement), changes in education in these areas, change in location (wing, floor, or office space), changes in procedures.

- A. ICU-CCU changes include any changes related to equipment, services, personnel, etc. of coronary or intensive care units
- B. Radiology changes include changes in radiological diagnostics, treatment or therapy
- C. Rehabilitation changes include changes in:
  1. physical therapy
  2. occupational therapy
- D. Lab changes include changes in:
  1. EEG work
  2. EKG work
  3. chemical lab work
  4. bacteriology
  5. blood studies
  6. urine studies
  7. pathology
  8. pulmonary function studies
  9. the blood bank
- E. ER (emergency room) changes include changes in:
  1. emergency room personnel
  2. coverage composition and policy
  3. equipment for ER
  4. disaster drill
- F. Mental Health changes include changes in:
  1. social work
  2. social service
  3. area of drug abuse and drug abuse programs
  4. area of alchoholism

G. Inhalation Therapy changes refer specifically to inhalation therapy, but omit pulmonary functions and pulmonary therapy

H. Extended Care changes include changes in this area both in and outside of the hospital only if the hospital was responsible for the change.

I. Administrative Function changes include changes in:

1. budget, with references to:

   a. allocation or reallocation of funds
   b. budgetary categories

2. administration, with reference to:

   a. fringe benefits
   b. new department heads
   c. new committees
   d. inception or elimination of departments
   e. new liaisons
   f. utilization of committee meetings
   g. trustees
   h. administrative personnel
   i. outside consultation for the evaluation of facilities and services
   j. new personnel policies

J. Maintenance Operation changes include changes in:

1. buildings and grounds
2. laundry operation
3. physical plant

K. OPD changes include changes in:

1. outpatient clinics
2. OPD services in conjunction with the community

L. OR (operating room and Surgery) changes include changes in:

1. anesthesia
2. recovery room

VI. COMMUNITY

A. Changes in educational programs for the community, e.g., hospital days, pre-natal programs, drug abuse programs
B. Changes in use of VNA.

VII. NEGATIVE

A. Changes relative to elimination of educational programs
B. Changes where personnel has been dropped from the staff but not replaced
C. Changes with a loss of an education determinant, e.g., loss of educational program, loss of a nursing school
D. Changes in decrease of available funds

dc

APPENDIX L

CONTENT ANALYSIS OF EDUCATIONAL AND NON-EDUCATIONAL CHANGES-PHASE II

DETAILED CONTENT ANALYSIS OF PHYSICIAN EDUCATION CHANGES-PHASE II

Table 2[illegible]

Content Analysis of Educational Changes

			Experimental					Control				
			Op.	Ino.	Co.	Be.	Tot.	Op.	Ino.	Co.	Be.	Tot.
PERSONNEL	Physician	Addition	1	-	-	-	1	6	1	-	-	9
		Replacement	-	-	-	-	-	-	-	-	-	-
		No Response	-	-	-	-	-	-	1	-	-	1
		Other	-	-	-	-	-	-	-	-	-	-
	Other Personnel	Addition	11	-	-	-	11	6	3	-	-	9
		Replacement	2	-	-	-	2	2	-	-	-	2
		Other	1	-	-	-	1	-	-	-	-	-
		No Response	4	5	-	-	9	6	-	-	-	6
EQUIPMENT		Addition	18	2	-	-	20	12	-	-	-	12
		Replacement	-	-	-	-	-	-	-	-	-	-
		No Response	2	1	-	-	3	2	-	-	-	2
PHYSICAL PLANT			-	-	-	-	-	2	2	-	-	4
SPECIALTY AREAS		ICU-CCU	36	5	1	-	42	52	6	1	2	61
		Radiology	6	1	1	1	9	7	3	-	-	10
		Rehabil.	1	-	-	-	1	1	-	-	-	1
		Laboratory	5	2	-	-	7	6	1	-	-	7
		Emergency Room	2	1	-	-	3	1	2	-	-	3
		Mental Health	4	-	-	-	4	9	-	1	-	10
		Inhalation Therapy	9	1	-	-	10	6	1	-	-	7
		Extended Care	1	-	-	-	1	-	-	-	-	-
		Budget	17	2	1	-	20	9	2	-	1	12
		Adm. Function	40	11	2	-	53	35	6	4	-	45
		Maintenance	-	-	-	-	-	-	-	-	-	-
		OPD	1	-	-	-	1	1	-	-	-	1
		OR	14	1	1	5	21	10	1	2	2	15
COMMUNITY			36	6	1	-	43	25	3	2	-	30

KEY/

Op = operational (O)
Ino = initially operational (C & B)
Co = contemplated (A)
Be = behavioral change

Table 26a

Content Analysis of Non-Educational Changes

			Experimental N=42					Control N=39				
			Op.	Ino.	Co.	Be.	Tot.	Op.	Ino.	Co.	Be.	Tot.
PERSONNEL	Physican	Addition	115	53	3	-	171	86	21	3	-	110
		Replacement	18	7	-	-	25	10	1	-	-	11
		Other	14	14	4	-	32	7	6	4	-	17
		Not Specified	8	3	-	-	11	7	1	-	-	8
	Other Personnel	Addition	87	7	8	-	102	106	17	3	-	126
		Replacement	18	1	-	-	19	21	4	-	-	25
		Other	9	2	-	-	11	6	-	-	-	6
		Not Specified	25	7	5	-	37	30	7	2	-	39
EQUIPMENT		Addition	297	45	5	-	347	266	35	2	-	303
		Replacement	20	3	2	-	25	30	8	1	-	39
		Not Specified	69	10	2	-	81	70	16	9	-	95
PHYSICAL PLANT			41	82	20	-	143	43	70	18	-	131
SPECIALTY AREAS		ICU-CCU	61	36	7	-	104	47	26	8	-	81
		Radiology	87	42	13	-	142	73	22	7	-	102
		Rehabil.	32	7	4	-	43	22	14	2	-	38
		Laboratory	87	39	3	3	132	102	39	6	-	147
		Emergency Room	45	13	3	-	61	52	9	2	-	63
		Mental Health	29	11	8	-	48	36	14	7	-	57
		Inhalation Therapy	37	7	2	-	46	33	4	1	-	38
		Extended Care	9	8	7	-	24	4	6	1	-	11
		Budget	63	12	1	-	76	51	11	1	-	63
		Adm. Function	398	136	37	-	571	319	99	27	1	446
		Maintenance	14	-	-	-	14	17	2	-	-	19
		OPD	38	20	6	1	65	25	10	6	-	41
		OR	88	33	2	-	123	70	15	4	-	89
COMMUNITY			83	30	13	-	126	64	28	12	-	104

KEY

Op = operational (O)
Ino = initially operational (C & B)
Co = contemplated (A)
Be = behavioral change

Content Analysis of Phase II

Physician Education Changes	Experi-mental	Control
A. Resources	(137)	(86)
1. Fiscal support including hospital, staff and other sources	[19]	[7]
a. Establishment of budget for education	9	4
b. Staff monetary contribution or assessment	1	1
c. Salary DME	3	1
d. Provision of funds for Library	6	1
2. Educational facilities, equipment and materials including audio-visual aids and library	[59]	[49]
a. Provision of Kinescopes, films or projectors	20	19
b. Provision of audio-digest with tape recorders	4	6
c. Use of closed circuit T.V. to outside	1	1
d. Use of Albany 2-way radio	2	
e. Use of audio-visual equipment (tape meetings and bring back)	2	1
f. Use of training devices (tutors)	4	2
g. Development of library including enlargement of collection, provision of space & reorganization of library	19	14
h. Implementation of PMI-NERMLS Core Medical Library	7	6
3. Hospital Personnel including DME, pathologist, secretaries and librarian	[19]	[11]
a. Establishment of DME, including sharing with another hospital(s)	11	6
b. Establishment of full or partially paid department chiefs or director of medical services	2	2
c. Participation of pathologist and radiologist in educational program	2	2
d. Provision of librarian - full or part time	3	1
e. Provision of secretarial help	1	
4. Outside resources including educational agencies visiting consultants and outside speakers	[40]	[19]
a. Utilization of PMI	2	
b. Utilization of RMP	4	

	Experi-mental	Control
c. Utilization of universities or academic institutions	7	6
d. Utilization of miscellaneous resources (RHA)	2	
e. Utilization of outside consultants	4	3
f. Utilization of outside speakers	21	10
B. Planning & Design	((41))	((17))
1. Program design and assessment including evaluation of programs, recommendations, staff needs and interests, and community needs; specification of educational goals; structuring of activities and rotating responsibility among staff for educational planning and implementation; reorganization of committees	(32)	(12)
a. Establishment of, or change in education committee & library committee	6	2
b. Assessment of staff needs, interests and educational goals	1	2
c. Outline and review of hospital education goals and recommendations		1
d. Restructuring or initiation of education program, including selection of material & change in number and frequency of activities.	13	4
e. Rotation of staff responsibility for education program planning and presentation	8	2
f. Institution of mandatory attendance of M.D.'s & Trustees - including review by-laws	4	1
2. Educational program scheduling and attendance, including preparation and publicity of programs, and keeping attendance and minutes of meetings	(9)	(5)
a. Scheduling of activities on regular basis, well in advance, and publicize.	8	5
b. Inviting other physicians from community	1	
C. Programming	((122))	((82))
1. Patient or case centered activities including grand rounds, CPC's case presentations, and case literature review	(43)	(28)
a. Establishment of (Grand Rounds)	12	1
b. Establishment of specialty rounds including med., surgical, Ob-Gyn	5	6
c. Establishment of CPC	5	3
d. Establishment of Tumor Clinic	1	

	Experi- mental	Control
e. Establishment of case presentation or discussion or clinical conferences	8	8
f. Establishment of mortality conference	4	1
g. Establishment of x-ray conference	2	
h. Establishment of medical audit	6	3
i. Establishment of chart review		3
j. Establishment of peer review of clinical performance		1
k. Utilization of private patients		2
2. Educational use of routine hospital meetings including business and committee meetings	[10]	[5]
a. Educational use	6	4
b. Separation of education from business	4	1
3. Content centered programs including lecture programs, discussion groups and specialty care area education programs, e.g., ICU, inhalation therapy	[18]	15
a. Establishment of lecture programs	9	3
b. Establishment of Journal Discussion Groups	2	1
c. Establishment of hospital specialty care area programs, e.g., ICU, CCU, inhalation therapy, nuclear medicine	7	11
4. Joint physician-nurse educational activities including joint conferences, education programs built around specialty care	[5]	[5]
5. Miscellaneous training including self assessment test and postgraduate training at centers or other hospitals	[11]	[10]
6. Interhospital Sharing of educational activities and teaching personnel	[6]	[2]
7. House officer training including resident and intern, guest resident, and extern	[29]	[17]
a. Provision of Guest Residency Program	8	1
b. Provision or restructure of Intern & Residency training program	13	8
c. Provision of Medical Student or Extern program	8	8
. Behavior related to Physician Education	((39))	((17

			Experi-mental	Control
1. Alteration of attendance at hospitals and professional meetings			[25]	[10]
2. Alteration of attitudes or outlooks, including increased discussion and willingness to teach			[14]	[7]
Subtotal	A.	Resources	137	86
	B.	Planning and Design	41	17
	C.	Programming	122	82
	D.	Behavior related to Physician Education	39	17
Total			339	202

APPENDIX M

"THE IMPACT OF EDUCATIONAL CONSULTATION ON DEVELOPMENT OF CONTINUING MEDICAL EDUCATION PROGRAMS IN COMMUNITY HOSPITALS", NORMAN S. STEARNS, MARJORIE E. GETCHELL, ROBERT A. GOLD, AND MARTHA BOUCOUVALAS, PRESENTED AT THE 67TH ANNUAL CONGRESS ON MEDICAL EDUCATION, SPONSORED BY THE ASSOCIATION FOR HOSPITAL MEDICAL EDUCATION, FEBRUARY 12-13, 1971, CHICAGO, ILLINOIS.

THE IMPACT OF EDUCATIONAL CONSULTATION ON DEVELOPMENT OF CONTINUING MEDICAL EDUCATION PROGRAMS IN COMMUNITY HOSPITALS*

Norman S. Stearns, M.D., Marjorie E. Getchell, Robert A. Gold,
Martha Boucouvalas

Ten years ago, Postgraduate Medical Institute (PMI) began to explore ways to stimulate hospital-based education programs for physicians. We found educational consultation to be effective. Though our early efforts were limited in scope, results were encouraging and led us to undertake a large scale study of the consultation process. Now, after three years of studying the use of consultation at 40 hospitals under controlled conditions, we can make two firm statements: 1) limited inputs by physicians, acting as educational consultants, can significantly facilitate development of hospital-based continuing medical education programs; and 2) with such consultation, almost any community hospital, regardless of size or location, can develop and maintain a program.

These statements have direct implications for professional hospital medical educators, for it is you who are largely charged with responsibility for developing programs

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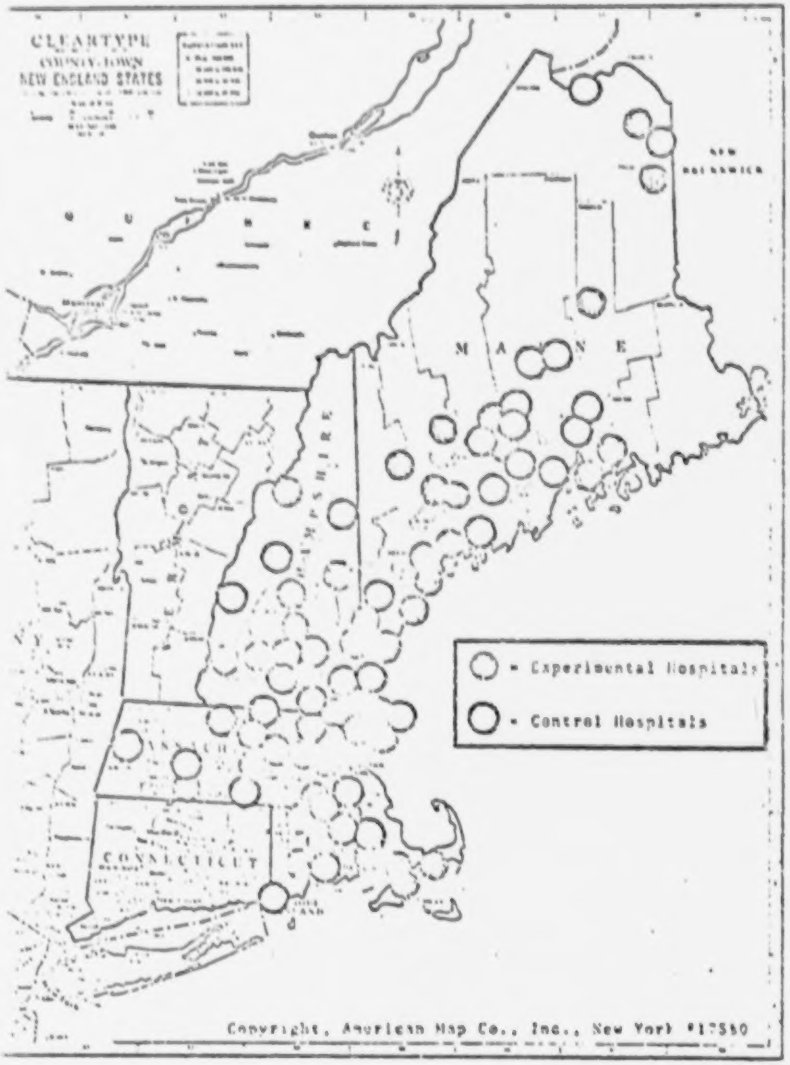
* Paper presented by Norman S. Stearns, M.D. and Marjorie E. Getchell, at the 1971 Annual National Meeting of the Association for Hospital Medical Education, held in conjunction with the American Medical Association Annual Congress on Medical Educators, Chicago, February 12, 1971.


CLEARTYPE
COUNTY-TOWN
NEW ENGLAND STATES
M A I N E
HAMPSHIRE
CONNECTICUT
NEW BRUNSWICK
○ - Experimental Hospitals
○ - Control Hospitals
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at your own hospitals and it is you who can provide the mechanism to facilitate program development at other hospitals that do not yet enjoy the resources of a professional medical educator.

Our study was supported by a three-year contract, beginning in 1967, with the Division of Physician Manpower, NIH. We offered education consultation to all 190 acute, short-term, community general hospitals in four New England states. Fifty-five hospitals responded affirmatively. A sample of forty hospitals stratified along the parameters of bedsize, geographic location and distance from major medical centers, was designated as an experimental group to receive consultation. Appropriate additional hospitals were recruited to function as a matched control group not receiving consultation. (Slide 1) This map illustrates the distribution of experimental and control hospitals across the four states of Maine, Massachusetts, New Hampshire and Rhode Island. Experimental hospitals are indicated by solid dots and control hospitals by circles. (Slide off.)

Consultation as envisioned in our study was to be a catalytic stimulant to facilitate development of

CME programs by teaching a practical approach to planning and implementation based on identification of local needs and maximum use of local resources. It was to be a "learning-by-doing" experience, with the consultant serving as a teacher-collaborator with the hospital's designated education coordinator.

PMI trained 13 physicians recruited from Boston area medical schools to serve as part-time consultants. Over two years, two separate consultation periods were programmed. During a five-month consultation period in the first year, consultants made from one to three visits to each of their hospitals, meeting with the local education coordinator, other key staff members, and, in some instances, administrators and trustees. After establishing working relationships with key personnel, consultants helped to 1) review ongoing education programs; 2) identify educational needs & local resources; 3) structure & initiate new programs:4) provide access to extra-hospital resources. During the second year, consultants made from 1 to 5 hospital visits. In addition, the consultation procedure was modified to provide 6 days of training for both consultants and local coordinators. The training was designed to sharpen consultants' skills, and to

PHYSICIAN EDUCATION RECOMMENDATIONS

PROGRAM RESOURCES

1. Financial - e.g., establish education budget
2. Personnel - e.g., appoint a DME
3. Facilities & Materials - e.g., enlarge library collection
4. External Ed. Resources - e.g., establish guest educator program

(2)

PHYSICIAN EDUCATION RECOMMENDATIONS

PROGRAM PLANNING

1. Program Assessment — e.g., determine staff ed. needs
2. Program Design — e.g., outline and review ed. goals
3. Program Scheduling — e.g., schedule activities on a regular basis

(3)

PHYSICIAN EDUCATION RECOMMENDATIONS

PROGRAM IMPLEMENTATION

1. Patient-centered Activities - e.g., establish monthly gr. rd.
2. Subject-oriented Activities - e.g., establish program on development of ICU-CCU
3. Routine Committee Meetings - Add ed. function to pt. care committees e.g., tissue, util. rev.
4. House Officer Training - establish guest residency program

facilitate local coordinators' development as hospital medical educators, and to provide additional opportunities for exchange of ideas between consultants and local coordinators. Training was conducted in one-day segments at locations near Boston.

During the course of their activities in each consulting period, consultants formulated and submitted to their hospitals, sets of written recommendations tailored to individual hospital situations. In some instances, oral recommendations were also given. Most recommendations pertained to development of physician education programs; a few were directed to nursing and allied health education as well as to other areas of hospital function and service. Physician recommendations fell into three broad categories: RESOURCES, PLANNING and IMPLEMENTATION. (Slide 2 .) The first category included recommendations aimed at developing RESOURCES such as finances, personnel, facilities and materials.

(Slide 3 .) The second category included those calling for organized approaches to program planning, including design, scheduling and evaluation.

(Slide 4 .) The third category pertained directly to program implementation, including the specifics

STUDY QUESTIONS

- Is consultation effective in stimulating development of physician ed. programs?
- What factors associated with consultation or the hospital, facilitate or inhibit the impact of consultation?

(5)

of patient-oriented and subject-oriented education, and the educational use of routine hospital activities, such as tissue and utilization review committees. (Slide off)

A little later we will discuss both the content and frequencies of the recommendations.

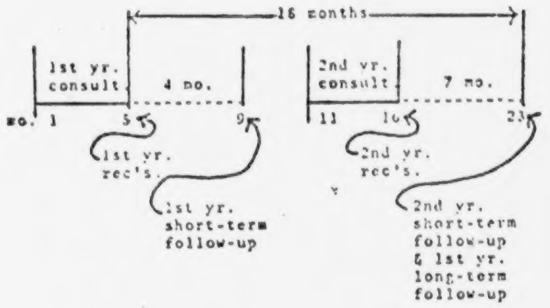
First I would like to set the stage for a discussion of the evaluation of the study. The consultation process was an attempt to effect change -- change in community hospitals' continuing education programs for physicians. On the next slide (5), we can see that the study attempted to answer two basic questions: 1) Is consultation an effective stimulus to the development of physician education programs at community hospitals; and 2) What factors associated with the consultation process and the hospital tended to facilitate or inhibit this. (Slide off.)

Evaluation of the impact of the consultation process focused on assessing the implementation of recommendations transmitted to experimental hospitals, and the consequent amount of change induced at experimental hospitals relative to spontaneously occuring change at a matched group of control hospitals.

On the next slide (6), we can see the relationship between consultations, recommendations and follow-

FIRST AND SECOND YEAR

CONSULTATION AND DATA COLLECTION SEQUENCE

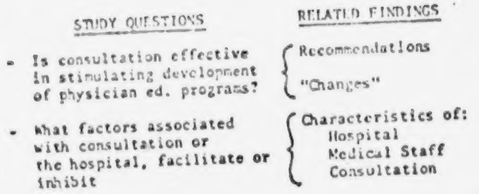

18 months
1st yr. consult
4 mo.
2nd yr. consult
7 mo.
mo. 1
5
9
11
16
23
1st yr. rec's.
1st yr. short-term follow-up
2nd yr. rec's.
2nd yr. short-term follow-up & 1st yr. long-term follow-up

(6)

up evaluation activities over a two-year period. If we follow the diagrammed time line, from left to right, we see that over the two years, two rounds of consultations were provided and two sets of recommendations were transmitted to experimental hospitals. Separate measures were taken of the implementation status of first and second year recommendations after periods of about 4 and 7 months respectively. Long-term follow-up measures of the implementation status of first year recommendations were taken about 18 months after they were first transmitted. (Slide off.)

Follow-up data concerning the implementation of recommendations at experimental hospitals and the changes occuring at both experimental and control hospitals, were obtained from in-depth structured interviews of several key persons at both experimental and control hospitals. Interviews were conducted by trained behavioral scientists, who followed rigorous procedures to ensure reliability and validity of measures obtained. The data were content and statistically analyzed.

My colleague, Marjorie Getchell, will now discuss some of the pertinent findings.



STUDY QUESTIONS

- Is consultation effective in stimulating development of physician ed. programs?
- What factors associated with consultation or the hospital, facilitate or inhibit

RELATED FINDINGS

- Recommendations
- "Changes"
- Characteristics of:
  - Hospital
  - Medical Staff
  - Consultation

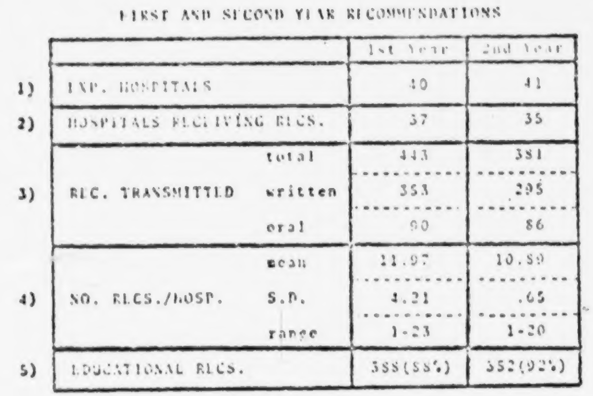
(7)

(Marjorie E. Getchell)

Thank you, Norman. May I have the next slide (7), please. The two questions that we tried to answer in this study were: 1) Is consultation effective in stimulating development of physician education programs? and 2) What factors associated with consultation or the hospital, facilitate or inhibit the impact of consultation? The answer to the primary question is yes, consultation is effective. As to the secondary question, we found several factors associated with the consultation's impact, but the data is much less conclusive.

Our criteria for effective consultation were: 1) that hospitals accept the consultants' recommendations and 2) that more education changes occur at experimental hospitals than at control hospitals.

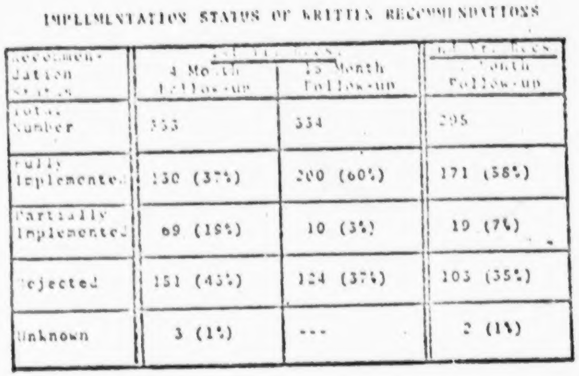
Let's take a look first at recommendations and see what happened to them. (Next slide,-8-.) In the first year of the study, 37 hospitals received recommendations; and in the second year, 35.



FIRST AND SECOND YEAR RECOMMENDATIONS

			1st Year	2nd Year
1)	EXP. HOSPITALS		40	41
2)	HOSPITALS RECEIVING RECS.		37	35
3)	REC. TRANSMITTED	total	443	381
		written	353	295
		oral	90	86
4)	NO. RECS./HOSP.	mean	11.97	10.89
		S.D.	4.21	.65
		range	1-23	1-20
5)	EDUCATIONAL RECS.		388(88%)	352(92%)

The recommendations were transmitted primarily in written form -- 353 the first year and 295 the second. The hospitals on an average received eleven recommendations each year, and the recommendations



IMPLEMENTATION STATUS OF WRITTEN RECOMMENDATIONS

Recommen-dation Status	1st Yr. Recs.		2nd Yr. Recs.
	4 Month Follow-up	18 Month Follow-up	7 Month Follow-up
Total Number	353	334	295
Fully Implemented	130 (37%)	200 (60%)	171 (58%)
Partially Implemented	69 (19%)	10 (3%)	19 (7%)
Rejected	151 (43%)	124 (37%)	103 (35%)
Unknown	3 (1%)	---	2 (1%)

(9)

were primarily directed at developing physician education programs.

This afternoon we will confine our discussion to the written recommendations which can be more reliably documented than oral recommendations. Data on oral recommendations, however, tend to support the same conclusions. (Next slide, 9 , please.)

First year recommendations were followed up twice; 4 months after they were submitted and again 18 months after they were submitted. Second year recommendations were followed up once -- 7 months after they were submitted. We found that within four months 37% of first year recommendations were fully implemented; and an additional 19% were partially implemented, that is, action to implement recommendations had been initiated but not yet completed. 43% of recommendations were rejected.

Our field evaluators reported that hospitals were often unable to implement recommendations within the four month period. For example, problems such as the time needed to obtain staff approval or to get trustees or administration to allocate funds, often prevented full implementation within the four months.

Hence, we concluded that a longer follow-up period might produce more valid indications of the hospitals' ability to act on the consultants' recommendations. This notion is supported by the findings summarized in the 18-month follow-up column, where we see that the full implementation rate increased from 37% to 60% at the end of 18 months, that the partial implementation rate dropped from 19 to 3%, and the percent of recommendations rejected dropped from 43 to 37%.

Though there were movements in all directions, the net effect was that after 18 months the partially implemented category disappeared while the fully implemented category increased markedly, and the rejected category stayed essentially the same. The right hand column indicates that the second year's 7 month implementation period yielded results comparable to those found at the 18-month follow-up of the first year's recommendations. (Slide off.)

As Dr. Stearns indicated earlier, recommendations fell into three broad categories: RESOURCES, PLANNING and IMPLEMENTATION of physician education programs. 50% of the recommendations transmitted fell into the resource category; 20% into the planning category;

MOST FREQUENT RECOMMENDATIONS

Number Submitted		Number Fully Implemented (4 mo.)	Number Fully Implemented (18 mo.)
31	Use guest educators	11	24
22	Hosp. provide ed. budget	6	13
19	Estab. case presentations	9	12
17	Develop library	7	11
15	Develop inter-hosp. ed. pgm	2	10
13	Estab/devel. DME position	6	8
11	Develop intern/resident pgm.	6	7
9	Use ext. resources for pgm.devel.	2	3
9	Estab. formal lecture series	1	3
9	Rotate staff responsibility for planning/implementing program	3	8
9	Restructure ed. program	2	4

(10)

and 30% into the implementation category.

Consultants were free to tailor their recommendations to individual hospital needs, and did so. They submitted a total of 70 different types of recommendations. The next slide (10) lists the most frequently submitted recommendations in rank order from top to bottom. The figures in the left hand column indicate the number of times a given recommendation was made. And the figures in the two right hand columns indicate in how many instances a given recommendation was fully implemented within 4 and 18 months respectively. For example, 31 recommendations advocated use of guest educators. Of these, 11 were implemented within 4 months; 24 within 18 months. 22 recommendations called for providing an education budget; 13 of these were implemented within 18 months. 13 recommendations pertained to development of the DME position, of which 8 were implemented within the 18 month period.

The 11 types of recommendations on this chart account for over half of the total number of recommendations. This fact suggests that these recommendations reflect some of the most common educational needs in community hospitals today --- or it may tell us something about the consultants' hang-ups. (Slide off.)

In essence what these consultants were really trying to do was to make recommendations based upon needs which would create change, especially educational change, in their hospitals. While it is nice to know whether change occured in these hospitals, it is far more important to know whether this change was significantly different from that occuring at hospitals in general. To answer this question, we examined what happened at a group of control hospitals matched for bedsize, distance from medical schools, and geographic location, and compared their changes with those at experimental hospitals.

The next slide (11) illustrates this comparison of reported changes for the first year. The black dot next to the 2.55 figure in the top half of the chart indicates that when total changes are considered, a statistically significant greater number of changes had occured at experimental hospitals than at controls. In the bottom half of the chart, total changes have been subdivided into educational and non-educational changes. Here we note that our experimental hospitals still have

FIRST YEAR

COMPARISON OF REPORTED CHANGES:
EXPERIMENTAL & CONTROL HOSPITALS

	TOTAL CHANGES		
	$\bar{X}$	S.D.	t
Exp.	23.42	9.13	2.55•
Cont.	17.86	9.20	

	ED. CHANGES			NON-ED. CHANGES		
	$\bar{X}$	S.D.	t	$\bar{X}$	S.D.	t
Exp.	8.72	4.32	2.11•	14.69	6.89	1.42
Cont.	5.57	4.29		12.30	7.21	

•- $p < .05$

SECOND YEAR

COMPARISON OF REPORTED CHANGES:
EXPERIMENTAL & CONTROL HOSPITALS

	TOTAL CHANGES		
	$\bar{X}$	S.D.	t
Exp.	67.24	27.36	1.29
Cont.	55.72	26.66	

	ED. CHANGES			NON-ED. CHANGES		
	$\bar{X}$	S.D.	t	$\bar{X}$	S.D.	t
Exp.	19.31	11.25	1.97●	48.05	23.17	.85
Cont.	14.79	9.43		43.92	19.31	

● - $p < .05$

(12)

SECOND YEAR EDUCATION CHANGES

		EXP.	CONT.
Physician	Mean	8.07	5.18
	S.D.	5.44	4.87
	t	2.49 ●	
Nursing	Mean	5.93	4.92
	S.D.	3.95	3.51
	t	1.21	
Allied Health & Other	Mean	5.31	4.69
	S.D.	4.58	5.06
	t	.57	

● = $p < .05$

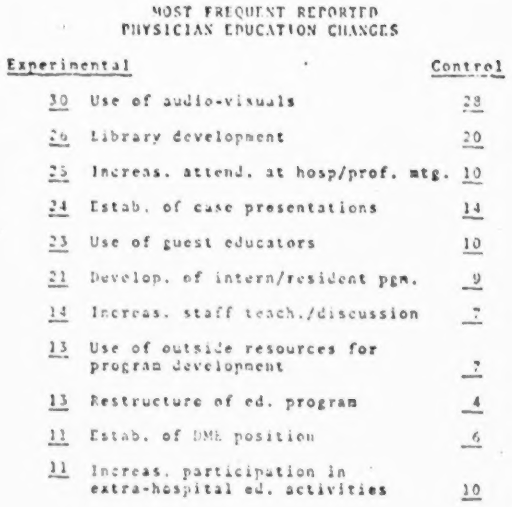
a statistically significant edge in the area of educational change, but not in the non-educational area. (Next slide, 12 .)

In the second year, we increased the rigor of our data collection techniques and we were able to increase both the amount and reliability of data obtained.

On this table, we see that education was the only area in which the experimental hospitals exhibited more change than control hospitals to a statistically significant extent. In the non-educational area, there was no significant difference between the two groups of hospitals. (Slide off.)

So far we have lumped all reported education changes together. Our consultation specifically tried to effect change in the area of physician education. To rule out the possibility that significant results were attributable to activity in other education areas, such as nursing, we broke our total educational changes into sub-groups and examined them to see if change had occured in the area we tried to influence.

This next slide,-13-, summarizes the results of our analyses. The big black dot tells us where the



MOST FREQUENT REPORTED
PHYSICIAN EDUCATION CHANGES

Experimental		Control
30	Use of audio-visuals	28
26	Library development	20
25	Increas. attend. at hosp/prof. mtg.	10
24	Estab. of case presentations	14
23	Use of guest educators	10
21	Develop. of intern/resident pgm.	9
14	Increas. staff teach./discussion	7
13	Use of outside resources for program development	7
13	Restructure of ed. program	4
11	Estab. of DME position	6
11	Increas. participation in extra-hospital ed. activities	10

(14)

significant difference lies -- physician education. These findings, when coupled with the 60% implementation rate of recommendations, seem to support the conclusion that consultation had a significant impact on the development of physician education programs in hospitals where consultation was provided. We have said that consultants stimulated change in the area of physician education programs. What are some of these changes?

On the next slide (14), are some of the more frequently reported education changes at experimental and control hospitals in rank order. It was encouraging to find that the big differences between experimental and control hospitals were in changes consistent with PMI's program development philosophy such as establishment of case presentations, use of guest educators, increase in staff teaching, and establishment of the DME. (Slide off.) So far, we have been talking about the effectiveness of consultation. We were also interested in finding out what factors associated with the hospital, the medical staff, or the consultation process itself facilitated or inhibited its impact. We examined the relationship between three different dependent measures and approximately 90 different in-

HOSPITAL CHARACTERISTICS ASSOC. WITH
REPORTED CHANGE (C) &/OR IMPLEMENTATION
OF RECOMMENDATIONS (I) IN EXPERIMENTAL HOSPITALS

Positive Relationship
Number of beds (I,C)
% Hospital budget for M.D. ed. program (C)
% Hospital budget for allied health ed. program (C)
ICU or CCU (I,C)

Negative Relationship
Distance from medical schools (I)
Age of administrator (C)

No Relationship
Intern/resident program (C,I)
Inter-hospital M.D. ed. program (C,I)

(15)

MEDICAL STAFF CHARACTERISTICS ASSOC. WITH
REPORTED CHANGE (C) &/OR IMPLEMENTATION
OF RECOMMENDATIONS (I) IN EXPERIMENTAL HOSPITALS

Positive Relationship
Existence of education committee (C,I)
Presence of hospital salaried DME (I)
Age of DME (C)
Presence of full time pathologist (C)

No Relationship (all C,I)
Size of medical staff
Mean age of medical staff
% staff with other hosp. affiliation
% G.P. on active staff
% bd. certified on active staff
Presence of DME
Full vs. part time DME
Age & service length of med/surg chiefs

dices of hospital, medical staff and consultation characteristics. The three dependent measures utilized were: number of education changes, long-term implementation rate of first year's recommendations, and implementation rate of second year's recommendations. We can't begin to describe all of our findings here. So on these next three slides we will highlight a sample of them.

If I may have slide (-15-).

Now, what kind of hospitals reported more changes or implementation of more recommendations? Those with a greater number of beds; those who spent a greater proportion of their budget for physician and allied health education; those with ICU or CCU: those closer to medical schools; and those with younger administrators. (Next slide, please.)

What were the medical staffs like at the hospitals which exhibited more change or implemented more recommendations? They had an education committee, a hospital-salaried DME, an older DME, and a full-time pathologist. It is interesting to note that the mere presence of a DME, full or part-time, seemed to have no relationship to change or implementation rate. The

CONSULTATION CHARACTERISTICS ASSOC. WITH
REPORTED CHANGE (C) &/OR IMPLEMENTATION
OF RECOMMENDATIONS (I) IN EXPERIMENTAL HOSPITALS

Positive Relationship

Number of consultant visits (I)

Same consultant for two years (C)

Number of training sessions attended by consultant (C,I)

Number of training sessions attended by local coordinators (C,I)

No Relationship

Age of consultant (C,I)

(17)

fact that the DME was salaried appeared to be significant in this study.

The next slide (17) shows that there was a higher rate of implementation and/or an increase in change in hospitals where consultants made more more visits, stayed with the same hospital both years and attended all of the training sessions. More frequent attendance at training sessions by local coordinators was also associated with increased implementation rates and change. (Slide off.)

From what we learned in this study, we formulated a comprehensive approach to program development. Dr. Stearns will now outline that approach.

(Dr. Stearns)

Thank you, Marjorie.

We believe our findings indicate that, with a minimum of consultative assistance, almost any community hospital can plan and implement a continuing education program. Professional medical educators such as members of AHME would appear to be logical vehicles to provide such assistance. Many of you already possess required skills, and a limited amount of training can equip others.

While our study results showed that relatively small consultative inputs could stimulate large amounts of program development, it may not be possible to supply even limited help to all hospitals in all parts of the country. Furthermore, in the early phases of our study, both consultants and local program coordinators clearly demonstrated a lack of knowledge of how to proceed with program development on their own. Even with training, many repeatedly expressed a desire for more readily available information of the what and how to do it variety, which they could use to help them do their jobs. The desire was for practical suggestions which they could relate, adapt and apply to the hospital programs for which they were responsible and not for a set of procedures which had to be rigidly adhered to.

Therefore, based on our total experiences, particularly those of the study just reported, we have created a guide for program development that can supplement consultation when utilized or may substitute for it when it is not available. The guide is entitled Continuing Medical Education at Community Hospitals: A Manual for Program Development. It will be published in May as a supplement to the New England Journal of Medicine.

The manual includes a chapter on principles, techniques and procedures for delivering consultation and a section in which invited contributors, including Drs. Angelides, Brown, Fleisher, Perlman, Slee and John Williamson present their approaches to relating quality care assessment to continuing medical education. Our own experiences are reflected in chapters which build on a problem-solving application of basic scientific methodology which we call "A Systematic Approach to Developing Education Programs". Program development is viewed as the problem and is approached in the series of steps depicted on the next slide (18).

A SYSTEMATIC APPROACH TO DEVELOPING EDUCATION PROGRAMS

1. Marshall commitment, support & personnel
2. State overall goals
3. Identify staff education needs
4. Formulate objectives relative to identified needs
5. Consider potential elements of ed. programming
6. Determine local & supplemental resources
7. Structure & implement program based on objectives
8. Evaluate program relative to objectives & goals

(18)

Crucial initial steps include enlisting commitment of hospital medical staff, administration and trustees, obtaining strong moral and financial support for a person to be responsible for program development and for other personnel to assist him.

Early in planning, goals of the program should be set by all participants, namely, by the coordinators, the learners and the teachers. Goals should state what is to be accomplished. Ultimately, the general statements of goals will have to be translated into relevant objectives which reflect and are addressed to staff needs.

At each hospital, one should ask: "What level of needs are we prepared to examine?" That is, do we look for gaps between actual performance and specified standards of acceptable practice, or do we base programs on what planners or learners perceive as needs. Demonstrated needs can be shown to have a direct bearing on quality of care, but felt needs will always exist and have an intrinsic validity to the individuals who own them.

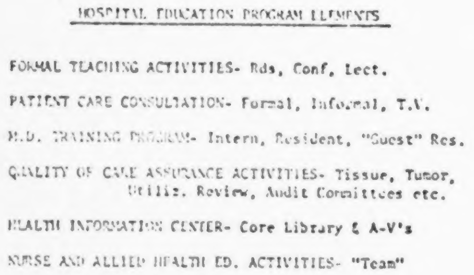
The Systematic Approach to Developing Education Programs allows local institutions to utilize techniques which identify either demonstrated or felt needs.

Regardless of the approach used, it is not possible to address all identified needs in any hospital education program. Therefore, some order of priority must be established. Doing so will facilitate formulation of corresponding objectives in the next step.

An objective as we define it is a statement of specific attitudes to be cultivated, knowledge to be gained or performance level to be achieved requisite to meeting goals. With formulation of objectives the hospital medical educator should be able to define in measurable terms the desired scope and content of the program, and begin to consider potential programming elements.

Basic staples of programs applicable to most community hospitals are shown on the next slide. (19)

It should be emphasized that while these elements are familiar to most physicians, proper implementation on a continuing basis is not common in most community hospitals. Individual elements are misused and seldom is there a concerted effort to rationally coordinate all elements into a program addressed to a common set of goals and objectives. (Slide 20, please.)



HOSPITAL EDUCATION PROGRAM ELEMENTS

FORMAL TEACHING ACTIVITIES- Rds, Conf, Lect.

PATIENT CARE CONSULTATION- Formal, Informal, T.V.

M.D. TRAINING PROGRAM- Intern, Resident, "Guest" Res.

QUALITY OF CARE ASSURANCE ACTIVITIES- Tissue, Tumor, Utiliz. Review, Audit Committees etc.

HEALTH INFORMATION CENTER- Core Library & A-V's

NURSE AND ALLIED HEALTH ED. ACTIVITIES- "Team"

A SYSTEMATIC APPROACH TO
DEVELOPING EDUCATION PROGRAMS

1. Marshall commitment, support & personnel
2. State overall goals
3. Identify staff education needs
4. Formulate objectives relative to identified needs
5. Consider potential elements of ed. programming
6. Determine local & supplemental resources
7. Structure & implement program based on objectives
8. Evaluate program relative to objectives & goals

(20)

Having taken steps 1 through 5, the HME must determine appropriate program resources including personnel, facilities and activities available at his hospital and those needed supplemental resources which can be drawn from sources outside his hospital, such as, medical schools, university hospitals, RMP's, and so forth.

With needs identified, the scope and content of the program defined, and available and needed resources determined, the actual program can be structured and implemented.

Once implemented, the program should be evaluated to determine the extent to which it met its objectives and achieved its goals. Evaluation should be used to assess the effectiveness of the program and to provide data for altering it. Assessment can be at various levels, including attendance and opinion, knowledge and skill acquisition, practice change, and impact on patient care. (Slide off.)

PMI's study of continuing medical education programs at more than 80 community hospitals in New England, indicated that regardless of the nature of existing programs, improvement in planning and implementation of new programs can be stimulated by educational consultants and minimal training of hospital program coordinators. Our observations suggest that there is room for improvement in all aspects of hospital education programming and that attention must be given by those responsible for stimulating or effecting improvements even to those aspects of program development which on the surface seem most obvious and simple, but in practice are not obvious and not simple. We believe that community hospitals are willing to accept the idea that continuing medical education is a responsibility of all. We also believe that stimulation and guidance, probably from sources outside the institution, is necessary to effect program development initially and perhaps on a continuing basis.

We have reported results of our consultation efforts in terms of implementation of elements of hospital education programming resulting from consultant recommendations and in terms of reported changes in activities related to program development. We recognize behavioral change leading to improved patient care as the ultimate demonstration of accomplishment. But, as a beginning step, we will accept change that demonstrates a willingness on the part of physicians to help create and accept educational opportunities at their own hospitals and to assume along with administrators and trustees the real responsibility for carrying out these efforts on a continuing basis.

F-8c

PHASE II

POSTGRADUATE MEDICAL INSTITUTE

Evaluation

HOSPITAL EDUCATION COORDINATOR MEETING

April 26, 1969

Name ______________________________

Hospital ______________________________

I. Please circle the number which best reflects your evaluation of April 26th meeting.

not useful — very useful
1 2 3 4 5

II. The most useful part of today's meeting was: (explain)

III. The least useful part of today's meeting was: (explain)

IV. Please cite and explain one instance of personal learning for you today which you think you will attempt to apply in your capacity as consultant or local coordinator.

V. What areas or topics would you like to focus on at future meetings? (Please indicate your choice in order of preference.)

1. ______________________________
2. ______________________________
3. ______________________________
4. ______________________________
5. ______________________________
6. ______________________________